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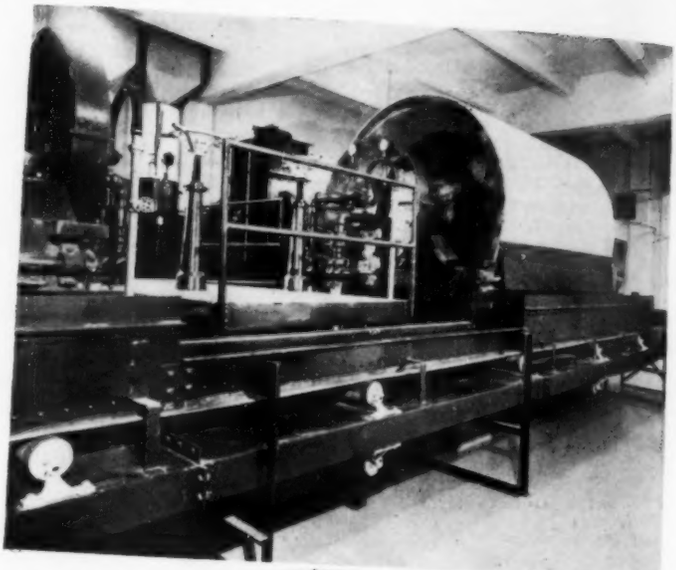
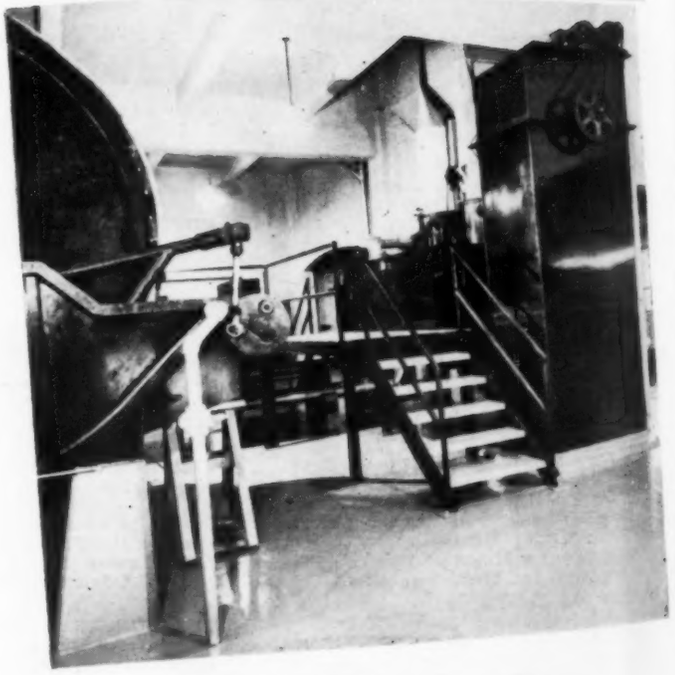
Eliminate Him!

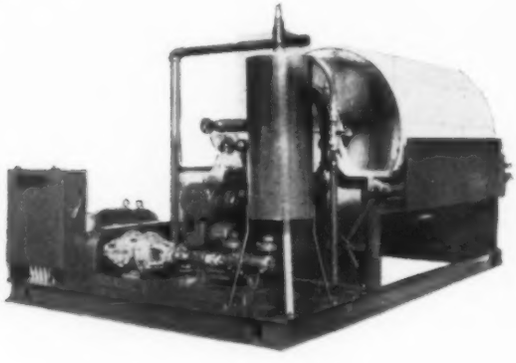
Sewage Treatment Plants which use old fashioned drying-beds in the handling of sewage sludge add to the health-menace by providing breeding places for the common house-fly, a carrier of many infectious diseases. Whether these drying-beds are out in the open or enclosed "green-house" style, they form a stagnant pool and precautions taken by operators of sewage plants cannot prevent their danger.

There is a sure way of eliminating the insect carrier in the treatment of sewage—it is thru the use of Eimco continuous vacuum filters for sludge-drying. In addition, Eimco Continuous Vacuum Filters offer many advantages; they may be installed in clean, modern buildings; drying of sludge is almost instantaneous; space required as compared to drying-beds is one-three hundredth on an equal capacity; operating personnel is cut down substantially; initial cost is no greater than the installation of old fashioned drying-beds.

When you decide on a Sewage Treatment Plant, make it modern — include Eimco Continuous Vacuum Filters — consult an Eimco Filtration Engineer. Write to your nearest branch office — there is no obligation.







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List of coming conventions on page 155 For Index to Advertisements see page 202

United Nations Week — September 22-28

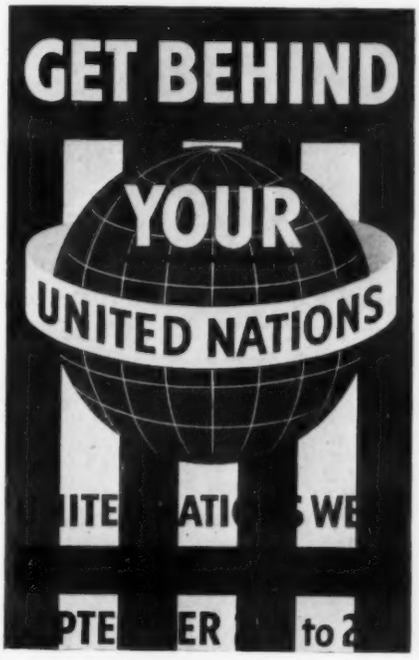
Are You Helping, Mr. Mayor?

WHEN this issue of THE AMERICAN CITY reaches its readers, the mayors of many cities will have proclaimed United Nations Week. If your city is not in this group, why not act now? If your proclamation has already been issued, maybe a follow-up message, or some telephoning to school superintendents, ministers, and local civic leaders, would help to speed preparation for local observances.

As William Emerson, president of the American Association for the United Nations, has pointed out:

"We are on the eve of a critical opportunity. All over America, the days of September 22-28 will be observed as United Nations Week. Planned to coincide with the first meeting of the General Assembly on American soil, this week has been chosen as the focal point of a nation-wide effort to secure understanding of and goodwill toward the aims of the United Nations.

"We know that cynicism and indifference can once more plunge the world into untold misery, and we believe equally that intelligent, sustained effort can free mankind from the curse of periodic wars. The courage and skill of our people can promote lasting peace just as successfully as they can mobilize for war. It is not necessary to persuade men and women that they do not desire a future of war for themselves and their children; it *is* necessary that they have confidence, based on reasonable knowledge, in the means already proposed whereby the intelligence and experience of the nations can be applied collectively towards the maintenance of peace."



United Nations Week Poster
(3 colors, 12¼ x 18¾ in.)

At the suggestion of the editor of THE AMERICAN CITY, printed matter offering ideas for the observance of United Nations Week has been sent to the mayor of every city in the United States of over 10,000 population. Officials of smaller places can obtain similar aid on application to the American Association for the United Nations at 45 East 65 St., New York 21, N. Y.

Help to make United Nations Week a success!

Aids and Snags to Veterans' Housing

New NHA Film— "Homes for Veterans"

THE STORY of a soldier's return from overseas and of his dream of homecoming shattered by crowded, unhappy living conditions, is told dramatically in a 16 mm., 25-minute sound movie produced by the National Housing Agency and released last month.

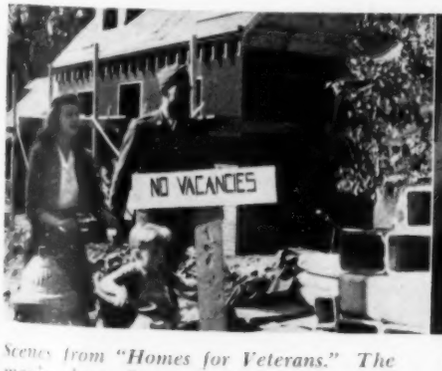
The film also tells how, spurred on by the ever-present specter of this homeless veteran, the public-spirited citizens of his community form a Mayor's Emergency Housing Committee, tackle the tough problems of planning, shortages, building codes, financing, and get the Veterans' Emergency Housing Program under way.

The film can be obtained from film distributors or officers of the National Housing Agency. A directory of distributors handling the film is available from National Housing Agency offices and from Mayors' Emergency Housing Committees.

A Setback to Veterans' Housing

FAILURE of the House Banking and Currency Committee to report out the Wagner-Ellender-Taft bill (S. 1592), thus preventing enactment of that measure by the recently adjourned session of Congress, is deplored in a statement issued July 29 by Wilson W. Wyatt, Housing Expediter and NHA Administrator.

(*Continued on page 109*)



Scenes from "Homes for Veterans." The movie shows how a veteran's dream of homecoming is shattered by crowded, unhappy living conditions.

The veteran's futile hunt for a place to live and his growing bitterness and disillusionment in the face of rebuffs is dramatically told.

Spurred on by the ever-present specter of this homeless veteran, the public-spirited citizens of his community combine their efforts to obtain housing.

Take a letter from A to Z

WHEN you turn the telephone dial you are taking control of one of the world's largest and most ingenious machines.

It is a giant mechanical brain which remembers and passes along the letters and the numbers you select. It sets up traffic lights to hold the road open, and reports back if the telephone you want to reach is busy.

Dial has made great strides in recent years, but greater things are in store.

Some day, Bell Telephone Laboratories will make it possible for you to dial across the United States as simply and promptly as you dial a neighbor now.

All of this is part and parcel of the over-all Bell Laboratories program — to help the Bell System keep on giving you the world's finest telephone service.

BELL TELEPHONE SYSTEM

Our Municipal Notebook

Main Street Malady Plagues Municipalities

INCREASED use of motor vehicles during the last year has so swelled the flow of traffic through the Main Streets of the United States that many of these streets, far from fulfilling their normal purpose of traffic movement, have become transportation bogs in the center of the city. The relief obtained by wartime restrictions has been removed, and the specter of jammed streets has returned with redoubled proportions to haunt city officials.

Moving vehicles through the streets is one matter; handling those which remain in the business area is another. Parking is a Main Street malady which cannot be neglected, for it has immediate and far-reaching effect on the entire problem of congestion. Cars lining the curbs impede the traffic flow and on narrow streets sometimes choke it down to a trickle. Those cruising about in search of temporary storage space contribute to the general confusion. Cars must be parked. But where?

There are city governments that have established municipal parking lots to handle the need for vehicle storage. Among them are Garden City, L. I., with seven municipal lots and Miami Beach with one completed, three in progress, and 12 projected. Underground parking possibilities are being explored by some of the larger cities, notably San Francisco and Kansas City, Mo., while others, such as St. Louis, Mo., and Atlanta, shift emphasis to outlying parking lots with transit service to the business district. Then there are cities that employ parking meters to promote quick turnover of curb parking in the downtown area, reduce the number of cars cruising the streets for space, and eliminate the evil of double parking, which is prevalent in many of the smaller communities. A recent meter installation in Rocky Mount, N. C., has contributed considerably to the improvement of traffic flow on previously congested streets.

Municipal officials are becoming increasingly aware of the need for serious study of the parking problem. Parking difficulties are not merely a slight upset of the city's circulatory system which will remedy itself in time. They represent a chronic ailment to be dealt with thoughtfully. It is not necessary for the city government itself to operate parking facilities. If private enterprise can provide lots and garages more advantageously, private enterprise should do the job.

But where no action has been taken toward alleviating conditions, city governments should introduce the necessary measures through their city plan commissions. Ordinances requiring off-street parking facilities for new and established buildings are good for the future. Something more immediate is needed for the Main Street malady, and municipalities must see that it is supplied.

Swarthmore Citizens Wait in Comfort

THE SMALLER services performed by a municipality are sometimes more appreciated than those which are more important. One of the former in Swarthmore, Pa., has been the installation of benches at the bus stops for the convenience of citizens waiting for buses.

These benches are placed in convenient locations where those occupying them can see the approaching bus at least a block away, but where they will be out of the way of vehicle and pedestrian traffic. The area around each bench is paved with flagstone or brick.

The construction is simple and inexpensive. Each bench is made of three pieces of 2-in. by 6-in. pine 8 ft. long, two pieces of 2-in. by 6-in. pine 7 ft. 8 in. long, and three pieces of 2-in. by 6-in. pine 13¼ in. long. The lumber, purchased dressed and cut to length, is painted in the shop by the street maintenance crew. The concrete pedestals are cast in the shop by the same crew, using a demountable form that can be used indefinitely. The pedestals are reinforced with No. 8 gage 6-in. by 6-in. steel mesh. Three-quarter-inch pipe is set in the concrete to form the holes for the bolts used to attach the woodwork.

The benches are erected in the field, the blocks being bored and bolted to the pedestals with ½-in. by 6-in. bolts and the top and sides secured with 16d nails.

Many expressions of appreciation have been received from our citizens. We find these benches constantly in use by bus passengers. Being backless, they do not attract loafers, and the littering of the street about the benches is probably no greater than would be the case if they were not there. Because they are set in the ground, they cannot be upset.

ELLIOTT RICHARDSON
Borough Secretary
Swarthmore, Pa.

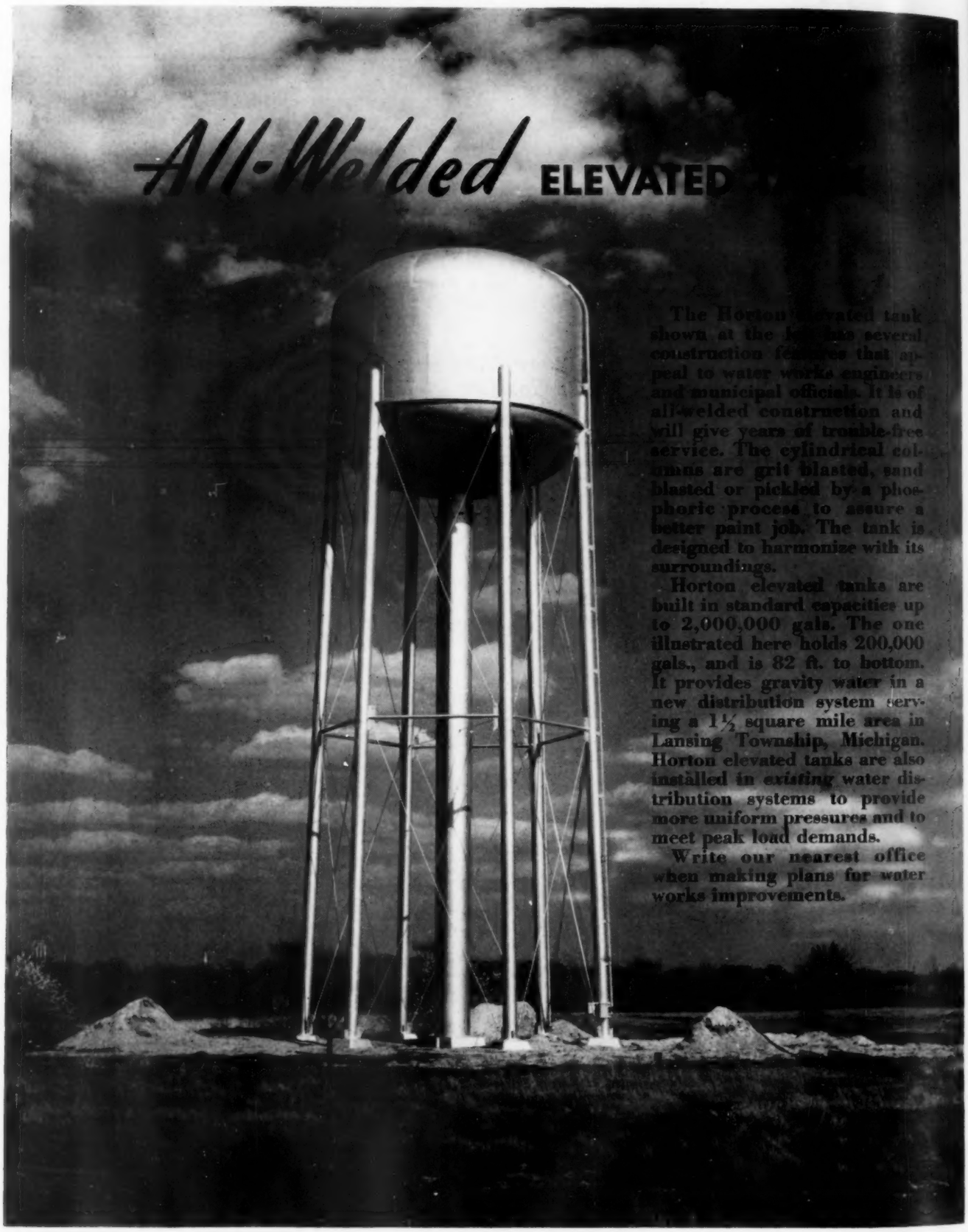
School for Assessors

THE UNIVERSITY of Kentucky Bureau of Business Research at Lexington and the Kentucky Department of Revenue, aided by the National Association of Assessing Officers, jointly sponsored a state-wide institute or school for local assessing officers in mid-June. There were 113 county and 7 city assessors present.

The general plan of the conference called for discussions of technical and legal requirements followed by sustained consideration of actual valuation issues. The discussions included instruction in the use of state-prescribed forms, the preparation of reports, and the observation of other formal requirements, and also took account of new legislation and recent litigation.

Assessment of all important classes of property, personal and real, was covered in the curriculum, with stress placed on the valuation of tangible personal and real property. Two sustained discussions were held on the valuation of farm land and two non-duplicating discussions on the particular issues presented by farm building valuation.

Pine benches such as the one here have been constructed by the Borough of Swarthmore, Pa., at the bus stops for the convenience of passengers.


All-Welded ELEVATED
The Horton elevated tank shown at the left has several construction features that appeal to water works engineers and municipal officials. It is of all-welded construction and will give years of trouble-free service. The cylindrical columns are grit blasted, sand blasted or pickled by a phosphoric process to assure a better paint job. The tank is designed to harmonize with its surroundings.
Horton elevated tanks are built in standard capacities up to 2,000,000 gals. The one illustrated here holds 200,000 gals., and is 82 ft. to bottom. It provides gravity water in a new distribution system serving a 1½ square mile area in Lansing Township, Michigan. Horton elevated tanks are also installed in existing water distribution systems to provide more uniform pressures and to meet peak load demands.
Write our nearest office when making plans for water works improvements.

CHICAGO BRIDGE & IRON COMPANY

Birmingham 1.....1502 North Fiftieth St.
Houston 1.....5601 Clinton Dr.
Tulsa 3.....1625 Hunt Bldg.
New York 6.....3308—165 Broadway Bldg.
Cleveland 15.....2236 Guildhall Bldg.
Los Angeles 14.....1402 Wm. Fox Bldg.
Chicago 4.....2127 McCormick Bldg.
San Francisco 11.....1233-22 Battery St. Bldg.
Philadelphia 3.....1616-1700 Walnut St. Bldg.
Atlanta 3.....2114 Healey Bldg.
Washington 4.....703 Atlantic Bldg.
Detroit 26.....1501 Lafayette Bldg.

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PENNSYLVANIA

Water Supply and Treatment

What Water Meters Did for Elizabeth City, N. C.

THE development of the water supply for Elizabeth City, N. C. (see page 115 of this issue), is indicative of a significant trend in water supply. Too often the municipality simply looks for the handiest source of something wet that you can call water, rather than for a source with water of good quality that requires a minimum of treatment. The work that the U. S. Geological Survey has been doing in cooperation with the various municipalities puts the study of ground water on a comparable basis with the analysis of drainage areas used for surface supplies.

However, Elizabeth City in 1931 took a step in the improvement of its water system that made a spectacular difference in the demand for water and the capacity of the plant to meet this demand. This occurred when the city went on a 100% metered basis.

Prior to 1931, when the water was distributed on a flat rate, the demand averaged 1.8 mgd and gave the plant with its 2-mgd top capacity several moments of uneasy concern. When the meters went in, the demand dropped to 0.3 mgd as the cost-conscious customers used less.

The demand gradually grew, of course, but never has again reached the per capita consumption figure that it did in 1931 and probably never will.

Springfield, Mass., Starts Pipeline Project

IN ITS FIRST step to increase the water supply to meet the peak 30 mgd demands, the Springfield, Mass., water department is beginning construction on its new 48-in. steel pipe line, which will cover a distance of approximately 26,000 ft.

At present the water department has in operation, between the filtration plant and its Provin Mountain distributing reservoirs, a 42-in. steel pipe line which has been in service since 1909. The capacity of this pipe line has greatly decreased, so that now the coefficient of friction is about 107 based on the Hazen and Williams formula. In 1942, a parallel line amounting to some 13,000 ft. of 50- and 60-in. pipe was started in order to serve additional industrial consumers in the city. This section increased the pipe carrying capacity by some 5 mgd.

With the termination of the war, the city found it necessary to extend a second line so that sufficient carrying capacity would be available to meet peak summer demand and started the present project. The pipe being installed will have a coal-tar enamel-coating, which is expected to help maintain a high coefficient.

Half the work is scheduled for completion within a 6-month period and will be connected to the existing line at that time. The contract calls for 360 days to complete the project.

Plans for the project were prepared by Malcolm Pirnie, Engineers, New York, N. Y. The work is under the direction of Peter Karalekas, Chief Water Engineer for the city of Springfield.

How Much Does Metering Conserve Water?

WHAT PART does metering play in conserving water? Can a water department serve more persons and more industries with the available water by metering? Here are some examples pointed out by Prof. Thurlow C. Nelson, Chairman, Water Policy and Supply Council, New Jersey State Department of Conservation, in a paper delivered before the New Jersey section of the American Water Works Association.

Twenty-three years ago, 34 systems in New Jersey with 0-10% metering and serving 262,000 persons registered a per capita daily consumption of 155 gals. For 36 systems with 10-90% metering and serving 1,077,000 persons, the daily per capita consumption was 119 gals. Finally, for 37 systems with 90-100% metering the daily consumption was 96 gal. per capita. The following list covers specific cities:

Moorestown, 90-gal./cap. @ 9% metered, reduced to 59-gal./cap. @ 100%
Ridgewood, 72-gal./cap. @ 2% metered, reduced to 62-gal./cap. @ 100%
Swedesboro, 100-gal./cap. @ 10% metered, reduced to 55-gal./cap. @ 96%
Woodbury, 150-gal./cap. @ 2% metered, reduced to 63-gal./cap. @ 99%
Jersey City, 159-gal./cap. @ 24% metered, reduced to 123-gal./cap. @ 100%

Geophysicists, who accurately predicted our dry years beginning in 1930, foretell another extreme drought between the years 1954-56, Dr. Nelson stated. To meet this potential emergency, cities must reduce consumption, stop all leaks of any magnitude, utilize flood flows to the utmost, and draw from surface supplies to save ground storage where such a choice can be made.

Pipeline Break Leaves City Waterless

BENTON HARBOR, Mich., found itself in the critical position of being without water last May when the joint in a six-inch high service pipe line let go and flooded the high lift pumping station. The six-inch line supplies the filter plant and takes off from an 18-inch header which receives the discharge from several high-lift horizontal centrifugal pumps. Benton Harbor's Superintendent William Russell stopped the pumps on discovering the break but could not get the 18-inch valve to seat properly. This allowed water to flow back into their station, flooding the pump room and getting the electric motors wet.

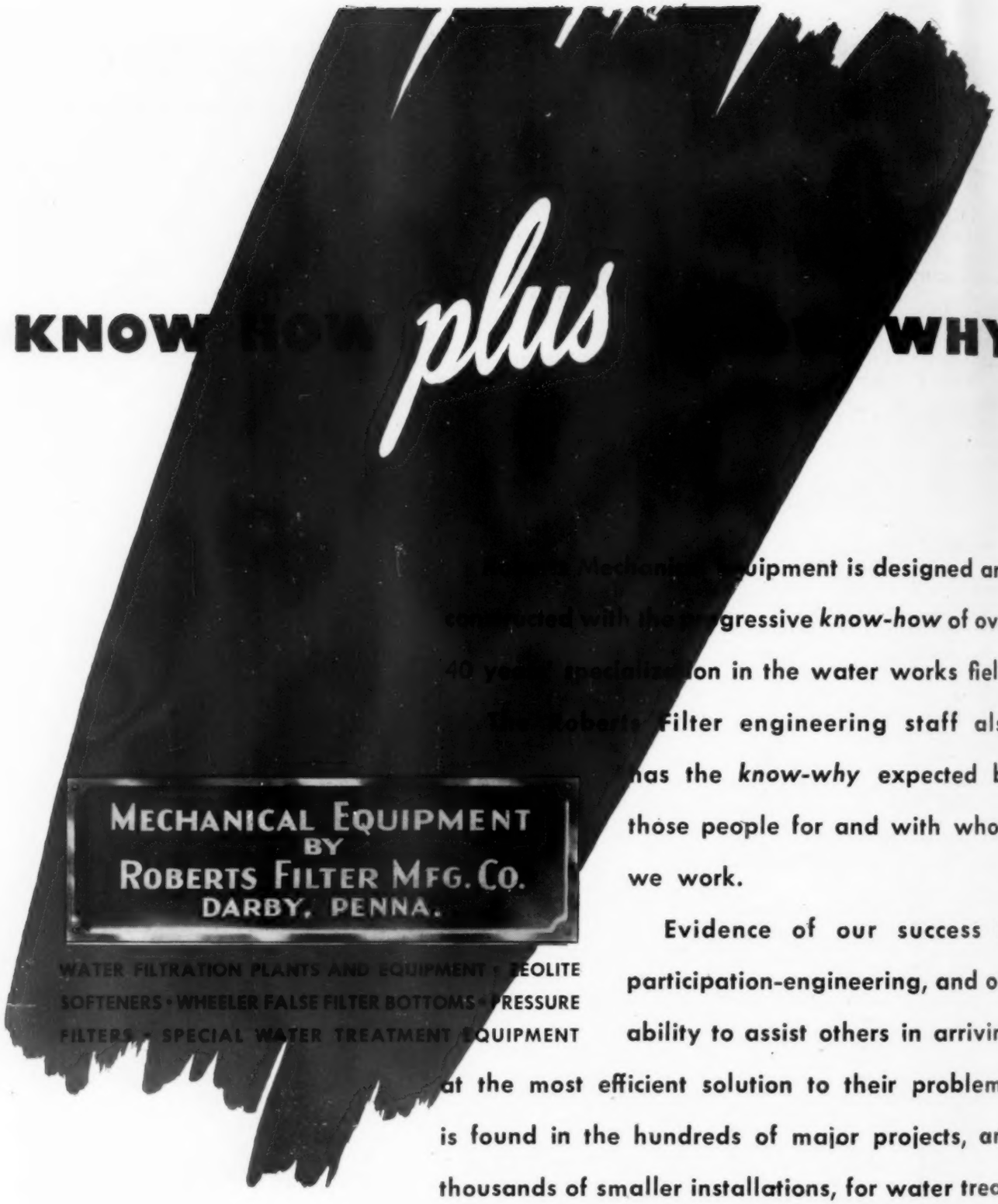
The town was without water for 5¼ hours. Superintendent Russell was able to restore service by setting up emergency pumping equipment on top of the clear well.

Service probably could have been maintained by using the 600,000-gallon elevated tank. However, Superintendent Russell decided to hold this for a fire emergency. Furthermore, no one could anticipate how much time would lapse before service could be restored.

This is the fourth case in Michigan during recent years of a pumping station's being flooded. Each resulted from a pipe failure and not from surface water. This can be avoided if new pumping stations are designed according to any one of the following solutions:

1. Locate horizontal centrifugal pumps at an elevation above ground level.
2. Install vertical pumps.
3. Isolate individual horizontal pumping units in cells if located below ground level so that flooding will be localized.
4. Provide horizontal and vertical pumping units sufficiently large to carry the town with either type of equipment.

From the *Michigan Water Works News*, Michigan Department of Health.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MECHANICAL EQUIPMENT
BY
ROBERTS FILTER MFG. CO.
DARBY, PENNA.
WATER FILTRATION PLANTS AND EQUIPMENT • ZEOLITE SOFTENERS • WHEELER FALSE FILTER BOTTOMS • PRESSURE FILTERS • SPECIAL WATER TREATMENT EQUIPMENT

Roberts Mechanical Equipment is designed and constructed with the progressive *know-how* of over 40 years' specialization in the water works field. The Roberts Filter engineering staff also has the *know-why* expected by those people for and with whom we work.

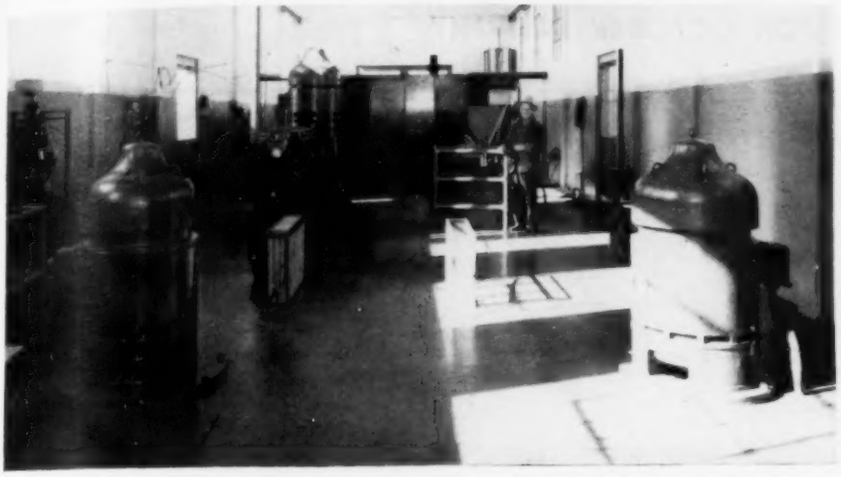
Evidence of our success in participation-engineering, and our ability to assist others in arriving at the most efficient solution to their problems, is found in the hundreds of major projects, and thousands of smaller installations, for water treatment, which are operating with the Roberts nameplate of dependability upon them.

ROBERTS FILTER MANUFACTURING CO.

660 COLUMBIA AVENUE • DARBY, PA.

Sewerage and Sewage Treatment

El Paso No Longer Flushes Streets with Sewage



This is the way the operating floor looks at the sewage lift station serving El Paso, Texas. The big Yeomans pumps now enable the station to care for any storm flow.

OF COURSE that wasn't the only reason for the new lift station, but El Paso certainly didn't like the idea of flushing its streets with sewage during every heavy rain. Another incidental reason was that, because of the war, increased population in El Paso and in Ft. Bliss, just outside the city, resulted in the sewage flow jumping from 6½ mgd to almost 12 mgd. Not only were the lift stations overtaxed but the treatment plant's 8-mgd capacity was overwhelmed. The effect of by-passing most of this sewage without treatment was not very wholesome from a sanitation standpoint. The lift station, however, caused the most annoyance to the city. Consequently, they built a new lift station during the war with enough capacity to handle the war-swollen load. A recent story by Ashley G. Classen, of Ashley G. Classen and Associates, El Paso consultants, tells about it in the *Yeomans Guard*, a house publication of the Yeomans Brothers Co., Chicago, Ill.

Unfortunately, the sewage collection system combines storm water with the sanitary sewers in portions of the city and results in flows at the lift station reaching at times as much as 18 gpm. The old lift station took care of this at its leisure, and simply stored the heavy storm flow in the sewers, in the manholes, and occasionally in the streets if necessary.

To correct this, the city installed four vertical centrifugal Yeomans dry-pit pumps with capacities of 1,500, 4,000, 6,000, and 8,000 gpm, giving a total of 27.8 mgd. The pumps are automatically operated by float-controlled selective equipment installed in the wet well. The fourth and largest unit is manually controlled and serves as an emergency unit. It has a geared head so that it can be powered by either its 100 hp electric motor or 120 hp gasoline engine.

Richmond, Ind., Uses Grit on Sludge-Drying Beds

W. E. ROSS, superintendent of sewage treatment, Richmond, Ind., uses grit to resurface his sludge-drying beds. This was pointed out in the Spring issue of *Sewage Gas*, a publication by the Indiana State Board of Health.

At first Superintendent Ross tried the conventional method of disposing of the grit in fills. However, grit is not a very beautiful material and must be topped with clay or firm soil to be completely satisfactory. Consequently, last year he decided to try the grit on one of the sludge-drying beds. He resurfaced one bed on an experimental basis and found it so successful that he now stockpiles all grit for this use. The grit is very clean and free from organic matter so that it does not cause trouble from odor or flies when stockpiled.

The use of grit in this way proves to be a real economy because it eliminates the necessity of removing the grit from the plant site and bringing in sand for resurfacing the sludge beds.

Sea Girt, N. J., Installs Twin Outfall Sewer

Sea Girt, N. J., is installing a new 12-in. twin outfall using an A. M. Byers welded steel line to help combat stresses caused by shifting sands and to insure water-tight connecnections. The design calls for welding the pipes together with 30-in. sleeves 14 in. in diameter.

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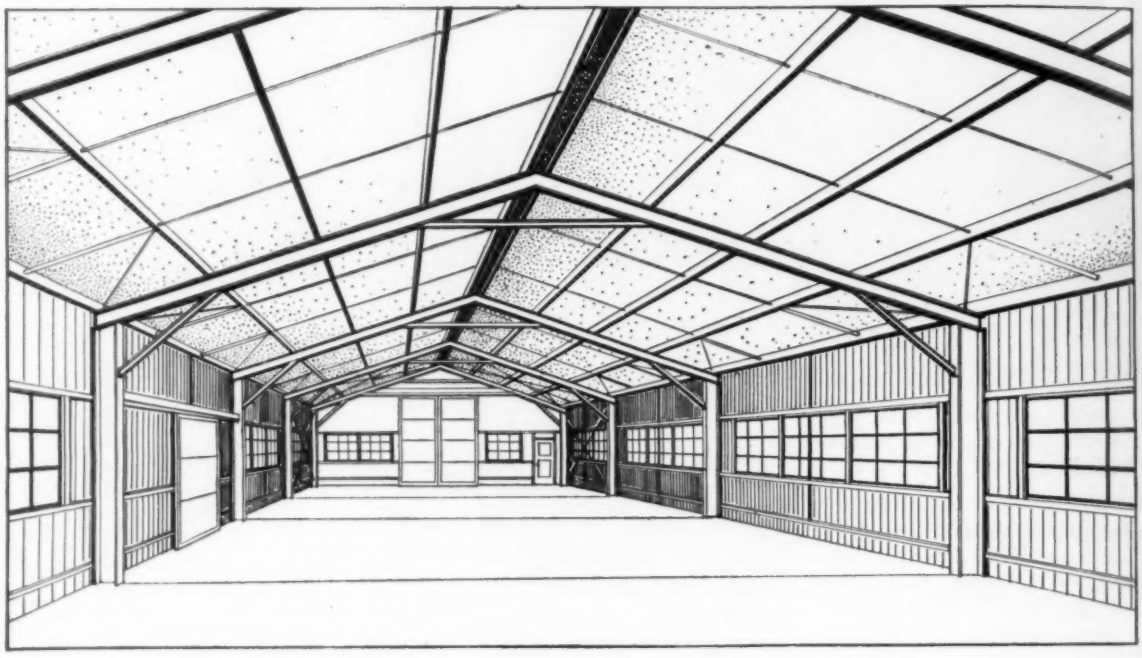

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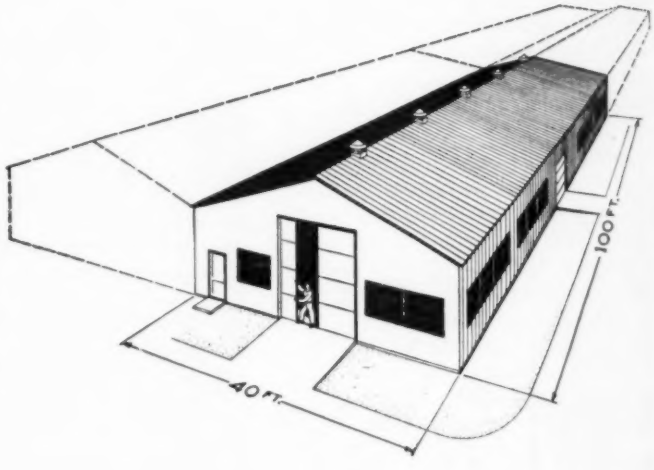

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Refuse Collection Practices

New Trucks Reinforce Washington, D. C. Refuse Division

William A. Xanten receives the titles to the 20 new Reo trucks equipped with Daybrook bodies and hoists. These trucks were badly needed by the city refuse division.

FOUR long lean years of hold-the-line operation ended recently in the Washington, D. C., City Refuse Division, when Superintendent William A. Xanten acquired a fleet of 20 new Reo dump trucks equipped with Daybrook bodies and hoists. The Washington refuse fleet was not new when the war started, and 51% of the fleet was over eight years old by 1946. The 20 new trucks replaced some of the old units and were vitally needed to maintain service.

"It is a tribute to the mechanical branch of our refuse division," says Superintendent Xanten, "for us to state that collection schedules were rigidly adhered to despite the handicaps of equipment and labor shortages during the war years."

The trucks arrived at an opportune time, for they are being utilized in connection with a precinct-by-precinct clean-up drive. This drive is to be a permanent project and has been given particular attention by the commissioners by the appointment of a permanent committee on cleanliness and sanitation. The committee is composed of the superintendent of refuse, the director of highways, the superintendent of schools, the inspector of the police department, National Capital Park Service officials and other interested persons.

Racine Adopts Collection Slogan

WHEN Racine, Wis., recently received its new fleet of Leach Refuse-Getters, Henry Nelson, commissioner of public works, breathed a sigh of relief, for he realized his ash-collection problem would be simplified considerably. The first assignment of the fleet was the completion of the government's tin can collection drive.

Commissioner Nelson says that the department's new slogan is:

"Ashes to ashes and dust to dust:
If you don't haul trash,
The Public Works must."

Abstracted from *The Elgin Street Cleaner*.

San Diego Street Cleaning and Refuse Collection

SAN DIEGO, Calif., wore out 264 power sweeper brooms and collected 7,461 cu. yds. of dirt in the process of sweeping 41.5 mi. of streets last year. The city uses Elgin street sweepers. Maintenance crews resurfaced 8¾ mi. of the city's streets, which average 40 ft. in width, during the same period.

The city's uneven topography necessitates many guard rails and fences along its streets and highways, and public works crews found it necessary to repair 4¾ mi. of these. They also laid out traffic lanes with a power-operated painting machine on 246 mi. of streets and painted 40 mi of of cross walks by hand.

Although 1,165 cu. yds. of trash were hauled from the city's beaches, it proved to be a losing battle—scarcity of labor coupled with indifference of patrons kept the beaches very dirty.

Refuse collection crews collected 41,143 tons of rubbish and 18,786 tons of garbage from the city during the year. On the basis of a population served of 288,050, this amounts to 288 lbs. of rubbish and 130 lbs. of garbage per capita.

From the San Diego Year Book for 1944-45.

Why Put Incinerators on the City Outskirts?

STUDIES of incinerator operating costs bring up the question of practice that is followed in virtually all incinerator plans. Why should an incinerator be located in an inaccessible part of a city?

A city will spend from one to two dollars per ton of refuse operating its incinerator. And it will spend from three to seven dollars per ton collecting refuse. Yet it will make the collection costs still higher by forcing its trucks to carry their insanitary burdens throughout the length and breadth of the city to some remote, outlying spot where the incinerator has been hidden as if in mournful expectation of poor operation and the hope the public will not discover it.

Let your city have the advantages of more economical refuse collection by selecting a convenient location for your incinerator if the economics of hauling call for it. Place your incinerator on the outskirts of town if your engineers have no confidence in their design or your superintendents have no confidence in their operation. Which is more economical—to haul the residue, an inert ash with a volume of 10-20% of the original refuse, out to a dumping ground on the outskirts of the city, or to haul the entire bulk of the refuse out to an incinerator at the same spot?

Any location must, of course, be studied with reference to local conditions. No general precept should be followed without first seeing if it applies to the specific case. Nevertheless, a city that merely puts its incinerator "out of sight" of the general public does itself an economic injustice.

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Mail Address: Box 527, St. Louis 3, Missouri
Plant: 5 Clinton Street, St. Louis
Phone: CEntral 1020. Teletype: SL 83

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Mail Address: Box 300, Cincinnati 14, Ohio
Plant: Front St. and Freeman Ave., Cincinnati
Phone: CHerry 3232. Teletype: CI 297

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Plant: E. 53rd & Lakeside Ave., Cleveland 14, Ohio
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Public Safety

South Bend Council Promotes Public Safety

DEDICATED to "a safer South Bend," the Safety Council Division of the South Bend, Ind., Association of Commerce has contributed largely to the reduction of the accident toll in that city through its various activities emphasizing traffic, industrial, and home safety.

The Safe Drivers' League and the Commercial Vehicle Section enlist the aid of operators of private and commercial vehicles to promote year-round interest in traffic safety. Principles of safe bicycling are presented by the Bicycle Safety Section, while the Pedestrian Protection Committee stimulates interest in safe walking.

Practical, community-wide programs are launched by the Fire Prevention Section to hold down the fire toll, and industrial safety and accident prevention are stressed through the Industrial Safety Section. Cooperating with local hospitals, the Council has made a survey of home accidents to determine the frequency and causes and formulate preventive measures.

A speakers' squadron is maintained to furnish safety education programs to business, social, and civic organizations.

Fort Wayne Modernizes Its Fire Department

THE LAST 11 years have seen decided changes and improvements in the service of the Fort Wayne, Ind., Fire Department. A program of modernization, efficiency, and discipline has resulted in sustained low fire loss. Further improvements now planned include the expansion of the drill tower and of the firemen's training instruction program.

New equipment to come includes a new car to facilitate business and emergency calls made by the chief, replacing two old cars used by former chiefs. A new 100-ft., 240-hp aerial ladder truck for No. 3 Fire Station will replace the old aerial ladder at that station. The installation of 2-way cars radio communications in all officers' cars and in most apparatus has already been completed.

Two additional inspectors are to be added to the Bureau of Fire Prevention, and consideration is to be given to the location of future fire stations and to equipment and protection needs of the expanded industrial areas.

Cumberland, Md., Police Adopt Novel Radio Set-Up

Semi-circular desk for police radio.

THE CUMBERLAND, MD., police department has adopted an unusual semi-circular desk arrangement for its radio equipment. The new desk, shown in the accompanying photograph, is compact and convenient, with all instrument panels in easy reach.

On the extreme left and right sides are 3 deep pull-out drawers, and arranged between them are 5 plywood panels on spring hinges. The No. 1 panel, which is not visible in the photograph but which corresponds to No. 5 panel opposite, is the loudspeaker panel for the local police radio. The second panel contains a fitted-in electric clock, while the third, or center, panel holds the carrier and line-level indicators of the radio system. The fourth panel contains a pull-down electric button system by which the police cruisers in service are indicated, and the fifth panel is the loudspeaker panel for the Maryland state police radio. The Cumberland police used Fred M. Link radio equipment in this installation.

Just beneath the desk on the left are two suspended telephones, and to the right is a series of push buttons connecting cell blocks, office, maintenance man, detective bureau, and chief's office. All wiring is concealed but accessible.

The desk is of Masonite with plywood panels and is trimmed with stainless steel stripping. It was built locally from a pencil sketch prepared under the direction of Police Chief Oscar A. Eyerman.

Radio Communication for Fire Departments

RADIO COMMUNICATION as an addition to municipal fire alarm systems and other established means of communication offers great possibilities for increasing the effectiveness of fire department operation, the National Fire Protection Association advises.

Technical improvements in radio have now increased the number of available channels, and great impetus has been given to fire department radio use by the action of the Federal Communications Commission in 1945 in allocating 39 clear channels for use by the fire service.

To make the most effective use of radio, each major piece of fire apparatus, and the cars of principal officers, should be equipped with two-way radio facilities. Such facilities would enable headquarters to keep in touch with apparatus answering an alarm, thus making it possible to recall apparatus which is not needed, or to reassign it. Headquarters could keep in touch with companies which might be out of quarters attending to grass or brush fires, or with companies doing inspection work. Companies out of the station would be as readily available as those on hand if equipped in this manner.

One of the most important reasons for putting radio on every piece of fire apparatus is to utilize all fire companies for a regularly scheduled inspection service. Fire hazards are frequently overlooked because the average fire company cannot spare more than an occasional man for district inspection work. These could be readily eliminated if each fire company spent two full days or more each week in systematic block-by-block inspection of its district. This would be entirely feasible if each company were equipped with two-way radio, supplemented by walkie-talkies.

Among the cities whose fire departments have made effective use of the radio are Austin, Texas, and Fort Collins, Colo. Prior to World War II, Austin was able to reduce the actual time of fire companies out of service by 37%. This was accomplished by using the police radio system with broadcasts to fire officials made direct from the fire alarm office, which is connected by means of telephone wires to the police broadcasting station. The system is so interlocked that neither department may interfere with the other except during very abnormal conditions. Fort Collins uses the two-way radio to enable a small force to send out 50% of its strength on inspection work and yet maintain full manpower for fire-fighting details at all times.

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ROAD BUILDING AND EARTH-MOVING EQUIPMENT

Street Construction and Maintenance

A Cobblestone Street Being Smoothed

Cincinnati, Ohio, used a Littleford asphalt distributor for putting a seal-coat on this cobblestone city street to which pea gravel had been applied and rolled. This application filled the cracks in the cobblestone surface and made a smooth thoroughfare.

Soil-Cement Bases Improve with Age

EARLY research and development work on soil-cement mixtures in the Portland Cement Association laboratory, as reported in *Soil-Cement News*, May 1946, disclosed that the hardness of soil-cement specimens increased with age. This observation, in part, prompted the molding of special soil-cement specimens, with various cement contents at required maximum density at optimum moisture content, for breaking in compression to obtain a more direct index of rate of hardening and increase in hardness. These early strength studies showed that cement contents within the range of those producing satisfactory hardness, as judged by soil-cement losses in the wet-dry and freeze-thaw tests, produce specimens that increase in compressive strength with age and increased cement content.

The studies showed that cement functions in increasing strengths in soil-cement as it does in concrete, in that hydration continues with time, provided moisture for hydration is available. Therefore, when compressive strength specimens were made to be included in the routine testing of soil-cement mixtures for testing at periods up to five years, this characteristic of increases in strength with age was vertified. As a result engineers established as one of the criteria of satisfactory and suitable hard soil-cement mixtures the requirement that soil-cement specimens molded with cement contents within the range of those found satisfactory in the wet-dry and freeze-thaw test also produce increases in compressive strength with age and with increases in cement content.

Baltimore Expressway Plans Now Being Prepared

PLANS are being prepared by the city of Baltimore, and surveys are being made for the portion of the Baltimore-Washington express highway that will extend into the city, states Nathan L. Smith, chief engineer.

Funds for this work became available through authorization by the Maryland State legislature of a 20 million-dollar bond issue by Baltimore. Half of this was submitted and approved by the voters, and $350,000 was earmarked for surveys and preliminary plans. The surveys will be coordinated with origin and destination surveys being conducted by federal, state, and municipal authorities. The route through Baltimore will be 9½ mi. long; preliminary studies indicate a 6-lane divided highway both depressed and elevated where necessary.

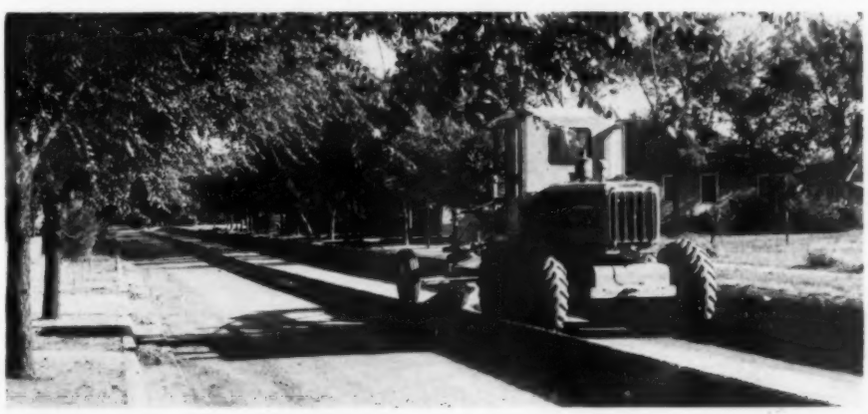
The federal government is now building a portion of the Baltimore-Washington expressway extending from Washington to a point midway to Baltimore. The Maryland State Road Commission will bring it to the city line at a specified point.

HOW AGE INCREASES SOIL-CEMENT STRENGTH

P.C.A. Soil No.	P.R.A. Soil Classification	Cement Content by Volume	Pounds Per Sq. In. When Broken		
			Age of Specimen 7 days	1 year	5 years
920	A-2	10%	1500	2500	2950
1080	A-2	10%	1170	1840	2460
1211	A-2	10%	610	1020	1300
890	A-3	10%	40	380	520
979	A-2	10%	750	1540	1640
1190	A-4	10%	660	1220	1800
999	A-4	10%	300	760	1050
1030A	A-7	10%	380	640	1090

NOTE: Specimens were 2 in. in diameter and 2 in. in height, and were stored in a 100% humidity room and submerged in water one hour before testing.

Building Stabilized Bases at Sidney, Nebr.



Long trim windrows appear as Sidney, Nebr., using a Caterpillar diesel motor grader proceeds with the construction of a stabilized base.

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Cities that "come back for more" offer the strongest testimonial possible, of the dependability and satisfactory performance of the famous **MILLER MULTIPLE-COIN** parking meter. For example, here are recent re-orders for **MORE MILLERS** from many cities to supplement pre-war installations.

Cities	First Installed Miller Meters	No. of Meters	Ordered in 1946	Total
Pocatello, Idaho	1937	237	225	462
Muncie, Ind.	1937	410	36	446
Salt Lake City	1939	2128	450	2578
Eugene, Ore.	1939	145	570	715
Aliquippa, Penn.	1940	250	50	300
Ogden, Utah	1940	610	400	1010
Canandaigua, N. Y.	1940	236	18	254
Freeport, Ill.	1940	250	250	500
Amsterdam, N. Y.	1941	285	150	435
Eau Claire, Wis.	1941	343	50	393
Punxsutawney, Pa.	1941	129	30	159
St. Petersburg, Fla.	1941	450	260	710
E. St. Louis, Ill.	1942	525	100	625
Elizabeth, N. J.	1942	500	120	620
Everett, Wash.	1942	850	133	983
Clarion, Penn.	1942	100	55	155
Provo, Utah	1942	275	250	525
Massillon, Ohio	1942	401	20	421
Meridian, Miss.	1942	275	100	375
Union City, Tenn.	1942	138	45	183
Wenatchee, Wash.	1945	360	175	535

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Vol. LXI, No. 9 **The American City** *September* 1946

Cleveland Maps Water Supply Future

Studies cover service to 500-square-mile metropolitan area and recommend treatment plant and pumping station improvements that will meet needs for 15 years and make intake and supply mains adequate for 50 years.

CLEVELAND'S city water supply will take on the responsibility of metropolitan service to an even greater extent than it does today, if it follows the plans submitted recently to Emil J. Crown, Director of Public Utilities, by Havens and Emerson, consulting engineers. The program contemplates a $50,000,000 improvement program which will make treatment plant and pumping station operations adequate for at least 15 years, and the more difficult to enlarge intake and supply mains adequate for 50 years. It will provide adequate feeder mains over a 500-sq. mi. area and contemplates serving 1,620,000 people in 1960 and 2,040,000 in the year 2000.

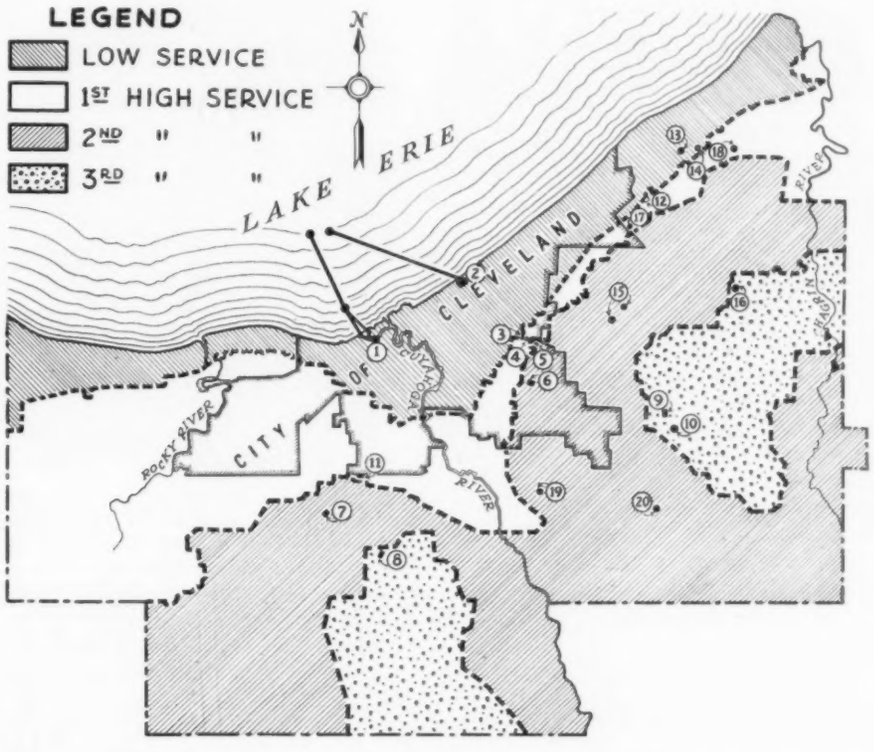
This new program follows and enlarges on a pattern that was established almost a century ago. In 1856 Cleveland's first water service was drawn from Lake Erie through an intake 50 in. in diameter and 300 ft. long. Since then, the city's water history has consisted of extending the intake by degrees into the lake and finally of treating the raw water, by chlorination in 1911 and by filtration begun in 1918 and expanded in 1925. The city has made no important increases since then either in its supply or its filter plant capacity and has limited water improvements to additions to the distribution system or to strengthening it through the installation of additional pumping equipment.

The present facilities draw water from Lake Erie through two tunnels, the intake cribs of which are about 4 miles off shore. The 9-ft. tunnel has a capacity of 150 mgd; the 10-ft. tunnel carries 165 mgd. Neither is equal to the present average demand. Actually during the past two years the maximum daily consumption has been within 10% of the combined figure.

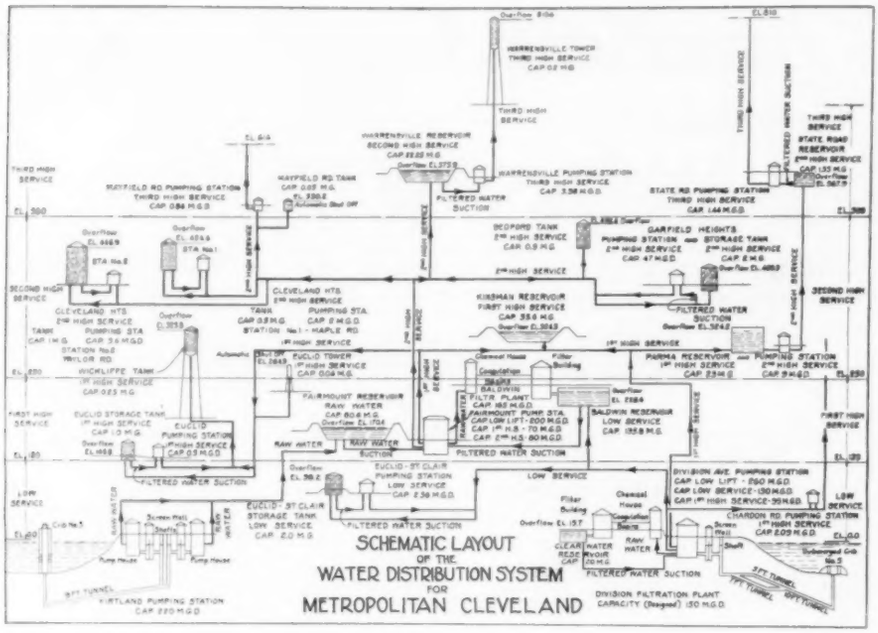
Each tunnel delivers water to a separate filter plant. The smaller Division Avenue plant went into operation in 1918 at a rated capacity of 150 mgd. Hydraulic and structural conditions, however, have reduced its capacity by some 10%. The larger Baldwin plant, completed in 1925, can handle 165 mgd. This, of course, means that filter capacities also are far below what they should be.

The Division Avenue station receives its water by one 644-hp 60 mgd, De Laval and two 1,073-hp 100 mgd, De Laval steam turbine-driven centrifugal pumps. At the Kirtland pumping station water is drawn from Lake Erie into Fairmount reservoir by a set of 7 pumps, identified as follows: two 907-hp and two 1,110-hp Holly reciprocating pumps, each rated at 25 mgd against a 250-ft. head; 1 De Laval steam turbine-driven centrifugal pump with a capacity of 30 mgd, and 1 with a capacity of 60 mgd; and 1 motor-driven De Laval centrifugal pump with a capacity of 30 mgd. Four Babcock and Wilcox 700-hp "Stirling" boilers equipped with Taylor underfeed stokers deliver 250 psi steam to the pumps. These pumps transfer the raw lake water to the Fairmount equalizing reservoir, whence it is pumped to the Baldwin filter plant.

The system contains filtered water storage capacity for 243.7 mg in 4 covered and 2 open reservoirs and 7 elevated tanks. The present distribution system includes approximately 272 miles of supply mains 16 in. in diameter and larger and 2.194 miles of dis-



The water supply facilities and service districts of the Cleveland metropolitan area. (1) Division Ave. pumping station and filtration plant; (2) Kirtland pumping station; (3) Fairmount pumping station; (4) Fairmount reservoir; (5) Baldwin filtration plant and reservoir; (6) Kinsman reservoir; (7) Parma reservoir and pumping station; (8) State Rd. reservoir and pumping station; (9) Warrensville reservoir and pumping station; (10) Warrensville tower; (11) Merkle Ave. pumping station (out of service); (12) Chardon Rd. pumping station; (13) Euclid low service tank and pumping station; (14) Euclid first high service tank and pumping station; (15) Cleveland Heights tanks and pumping station; (16) Mayfield Rd. tank and pumping station; (17) Euclid first high service tower; (18) Wickliffe tower; (19) Garfield Heights tank and pumping station; (20) Bedford tank.



tribution mains 12 in. and smaller, as well as 31,336 hydrants, 59,427 valves, and 187,878 meters. The system serves a total population of more than 1,200,000, of which approximately 30% live outside the city limits. Because of differences in ground elevation, the distribution system is divided into 4 service levels: low, elevation of 0 to 120; first, 120 to 250; second, 250 to 500; and third, above 500. The elevations are based on city datum which is 2.4 ft. above mean level of Lake Erie or 575.2 U.S.G.S. datum.

In analyzing future demands, the engineers have emphasized that the problem is metropolitan in scope. They point out the need for serving approximately 500 sq. mi. and an estimated population of 1,620,000 in 1960, and 2,040,000 in the year 2000. Analyzing this in terms of water would show an average daily demand of 276 mgd in 1960 and 331 mgd in 2000. For the same 2 years the maximum hourly demands are, respectively, 633 mgd and 770 mgd. The maximum daily demand for raw water is estimated at 432 mgd and 522 mgd.

Sanitary surveys show that sewage treatment at Cleveland has resulted in improving inshore waters, but the engineers conclude that any new supply of raw water should come from lake areas 2½ to 3 miles from shore.

Analysis of the filtered water shows that, although it meets all recognized standards, it is characterized by the periodic presence of tastes and odors. The engineers, therefore, contemplate introducing such taste and odor control measures as breakpoint chlorination and the introduction of activated carbon.

As pointed out previously, the engineers' analysis showed the deficiency in the present intake capacity. They recommend two new intakes to supplement the present capacity of 315 mgd. Both will be designed to anticipate the year 2000's need.

To Increase Raw Water Supply

The first, the Nottingham intake, will have a capacity of 150 mgd. Its shore terminus will be at Euclid Creek, where substantial preparatory work has already been done. Its intake crib will be located 3½ miles offshore.

The second, the Bay Village intake, will be approximately on the line of Clague Road. The specific site for the intake crib will have to await lake water studies, but probably will be approximately 2½ miles offshore.

Filter Plants

Existing filter plants have available for distribution a capacity output of 148 mgd at Baldwin and 135 at Division Avenue. To meet the 1960 demand, 2 new filter plants will be required. The plants will be built in stages. At Nottingham, the plant should have a rated capacity of 100 mgd, and at Bay Village, 25 mgd. The plants will be of the conventional type, employing coagulation and activated carbon to control taste and odor and lime to correct corrosion.

Filtered water reservoirs should be constructed at each of the sites in advance of building the filter plant proper. This will permit storing water during periods of low consumption and repumping it for distribution in periods of maximum demand.

The study pointed out the need for approximately 128 miles of new feeder mains. Of this, 20 miles will be in the low service district, 40 miles in the first high service, 59 miles in the second, and 9 miles in the third. All new mains will be lined in order to maintain design capacity. In addition, the program provides for relining 44.6 miles of existing pipe.

Storage Facilities

Adequate storage occupies a prominent place on the study. Apart from storage at the plants, existing facilities provide 87.9 mg of storage, of which 35.6 mg are in an open reservoir that, because of the extension of service to higher and more remote areas, is ineffective and should be abandoned. Similarly, the present system includes 5 elevated tanks which will become inoperative with improved pressure conditions.

The projected plan, of course, includes local storage. It provides for retaining the Parma reservoir and the one now identified as the State Road reservoir; although, in the latter case, it will be economical to reallocate the division between the second high and the third high service and to relocate the reservoir at a lower elevation. It is planned to retain the Warrensville reservoir on condition that it is safeguarded by a cover.

Elevated storage is included in the project. The Warrensville and Wickliffe tanks will be retained, and 10 new tanks will be added in outlying area. The plan omits plant storage and calls for total ground and elevated storage out in the distribution system to the extent of 70.2 mg, as compared with the 87.9 mg now available, if the ineffective 35.6 mg of Kinsman reservoir is included.

Pumping facilities also were subject to study, and a comparison made of steam and electric power. Analysis shows clearly that the station capacities at Kirtland and the low lift pumps at Fairmount are not now adequate for 1960 needs. Even if no changes were made at the several stations, there still must be some increase in pumping facilities.

The study recommends that the Kirtland station should be equipped throughout with centrifugal pumps, preferably driven by steam turbines with steam purchased from the nearby municipal electric light plant. It also shows how the Fairmount station can be improved by replacing existing steam turbines with more efficient units, or by electrification at some time

(*Continued on page 157*)

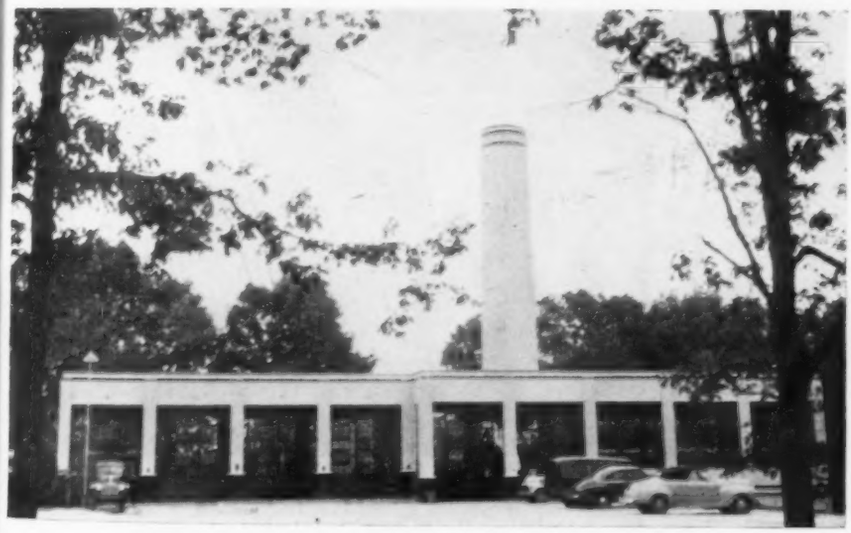
New Incinerator Combines Style with Utility

Monorail construction, automatic stoking, and easy ash handling are features of the new 150-ton incinerator of the Washington Suburban Sanitary District, Hyattsville, Md.

BEAUTY of design combines with efficiency of operation in the new incinerator now serving the Washington Suburban Sanitary District. The incinerator, capable of destroying 50 tons of mixed refuse in an eight-hour shift, utilizes two Nichols-Monohearth automatic stoking furnaces, each rated at 75 tons per day. The building and the furnace expansion chamber and stack are designed to accommodate a third unit when it is found to be required.

The building itself has a striking appearance. Constructed of glazed tile both inside and out, it is light tan with dark brown trim around the windows. The windows are large, giving the building good lighting and proper ventilation.

The incinerator design is the result of extensive study and investigation of incinerators in several communities in the eastern part of the United States. The crane and bin type was considered necessary for a plant of this size, and the monorail arrangement commended itself because of its simplicity. The investigation led to the adoption of the automatic stoking type of furnace, and consequently the plans were prepared on that basis.



The attractive plant serving Washington's Suburban Sanitary District. Although it is built in a relatively secluded spot, it is still centrally located to provide economy of trucking operations.

The plant has three stories—the upper floor is devoted to charging the furnaces, the lower floor to the operation of the automatically stoked furnaces, and the basement or ash tunnel to receiving the residue.

The charging arrangement is probably the largest monorail installation in any incinerator in the United States. The bin is capable of storing approximately 300 tons of refuse. Four large charging doors give the refuse trucks access to the bin. The monorail crane is a 3-ton P&H equipped with a 1½-yard Blaw-Knox refuse bucket.

An unusual and convenient feature of the charging room floor design is that the charging hoppers can be removed so that the trucks can be driven directly on the floor through auxiliary doors provided for this purpose and can dump their loads of refuse on the floor from which it can be fed to the furnaces, thus by-passing the bin. This allows the plant to operate even if the crane is temporarily out of service.

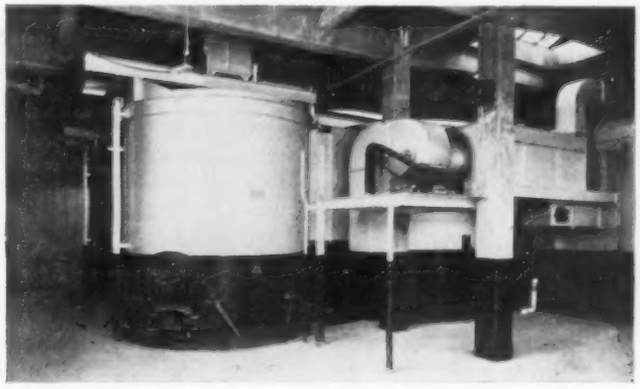
Both furnaces are automatically stoked by the rotating arm, which at the same time feeds a forced draft into the refuse and insures thorough burning. A Brown pyrometer gives the operator an instant check of furnace temperatures as well as the temperature of the air being introduced. A Brown recording pyrometer gives similar information to the plant superintendent in his office.

Screw Conveyors Remove Ash

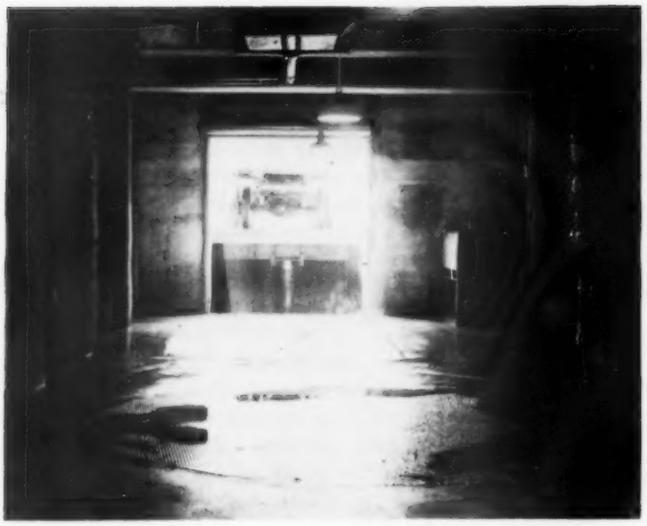
The combustion chambers of the furnaces are equipped with screw conveyors to remove ash that settles there. This is believed to be the first time that such a screw conveyor arrangement has been installed in an incinerator combustion chamber. The furnaces discharge through an expansion chamber into a stack 100 ft. high and 7 ft. 9 in. in interior diameter.

The basement or ash tunnel of the plant is equipped with a turntable so that trucks can drive in, turn around,

The operation of this plant features a straight-line monorail system.



Here are the two 75-ton automatically stoked incinerator units.



To remove ashes the designers installed in the basement a turntable which allows the trucks to drive forward into place, turn around, and drive out easily. Notice the hydraulic lift being used to remove the truck from the basement.

Here is a truck emerging from the basement on the hydraulic lift. The use of this lift to raise the trucks to street level eliminates maneuvering to any great extent in the yard where space is limited.

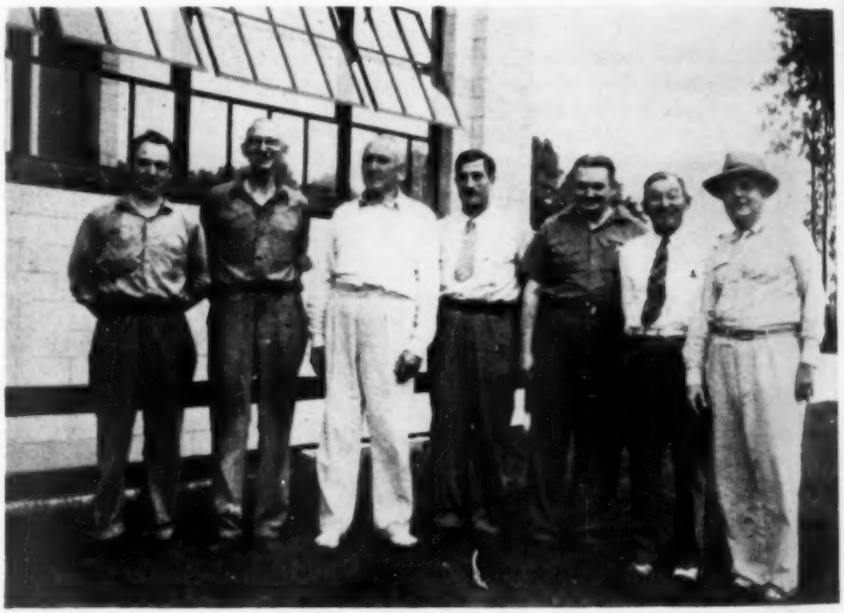
be loaded with ashes, and drive out again on the hydraulic lift which is employed to raise them to the street level without having to maneuver around in the yard where space is limited.

All refuse that is received in the plant is first weighed on a pit scale equipped with a Fairbanks scale and a Printomatic Weigher, a visible weighing device, which also makes an automatic record of each weight and a total of all weights for the day. (The automatic feature is not yet in operation due to delay in securing the mechanism). This gives a thorough check on the plant operations. Incinerator residue is also weighed before being sent to the fill.

The incinerator has a well-equipped office located close to the operating room, and also locker rooms, toilets, and showers for the workmen. These rooms are heated by radiation through a set of louvres from the incinerator expansion chamber.

This is the second incinerator used by the Washington Suburban Sanitary District and was constructed at a cost of about $250,000. In the area served by this plant, the district furnishes two collections a week and collects mixed refuse, separating only the ashes in season.

The plant was designed by the District's engineering staff under the direction of Harry R. Hall, chief engineer, and Harry B. Shaw, deputy chief engineer. H. R. Devilbiss was the construction engineer; C. A. Hechmer is the engineer in charge of maintenance and operation; F. H. Fierstein is superintendent. The plant was built by the F. H. Martell Co., Washington, D. C.



These men were on hand when the plant was given its acceptance test. Left to right they are: A. C. Smith, field superintendent of Nichols Engineering & Research Corp.; Sam Burgess, construction engineer for the Nichols Engineering & Research Corp.; C. W. Nichols, Sr., chairman of Nichols Engineering & Research Corp.; F. H. Fierstein, superintendent of the plant; C. A. Hechmer, engineer in charge of maintenance and operation; H. R. Devilbiss, construction engineer; Harry B. Shaw, deputy chief engineer.

Grand Junction, Colo., to Rebuild Water Supply

BY A solid 98% majority, the voters of Grand Junction, Colo., last July approved a $930,000 water expansion program. R. J. Tipton and Associates, Denver consultants, are drawing plans for the expansion which includes holdover storage reservoirs on the Grand Mesa at the headwaters of Kannah Creek, desanding works at the pipe line intake 20 miles from the city, filtration plant expansion to provide for the capacity of 7.5 mgd, repairs to clear water reservoirs, and an extensive distribution system reinforcement, including a pipe-line crossing in the Colorado River.

One of the interesting features of the program will be the repairs to the 13-mg clear-water reservoir. Extremely difficult soil conditions have caused settlement in the concrete slabs of the open concrete reservoir. The design selected provides welded steel lining on sand cushion. Work will proceed on the project as fast as materials become available.

Nashville Streets Get New Surface Treatment

By WARREN A. COOLIDGE
Director of Public Works
Nashville, Tenn.

A street surfacing project that catches up on maintenance deferred during the war

ONE of the more apparent war problems in Nashville, Tenn., was the deterioration of its system of streets. Like a great many other cities, Nashville suffered during the war because of asphalt and other shortages of materials. Consequently in June of 1945, when the end of the war seemed in sight, the Department of Public Works conducted a street-condition survey to see what would be required in the immediate post-war future.

Bond Issue Passed

Our survey showed that there were 136½ miles of major thoroughfares, secondary, feeder, and commercial streets which needed immediate resurfacing or reconstruction. Our estimated cost at that time was $2,000,000 for this work. With this as a background, we went to the people of Nashville with a program of street improvement and requested $3,000,000 in bonds—$2,500,000 for street work and $500,000 for the necessary sewer extensions. Our bond issue passed in good shape, so that we were able to start our work in April of this year.

The general condition of the streets was bad. They had not been cared for properly for the last 25 years, and the war had made things worse. However, the main thoroughfares still had a good base so that resurfacing was all that was really required.

$500,000 to Be Saved for Residential Streets

In our program we estimated about 40 miles of reconstruction out of the 136½ miles of streets. We did not include 216 miles of residential streets which probably will have to be cared for some time in the future. We expect to save out of our bond issue approximately $500,000 to be spent on residential streets and will make our selection on the basis of traffic load and need as disclosed by an analysis of the street surface and the effect of further neglect on the surface and on the base course.

This is the way the street looks after improvement. In the background are some of the old cobblestone streets which received this wearing surface.

In the 1946 program we have two contracts. Contract A was awarded to Eller and Olsen of this city; contract B went to Sam Finley, Inc., Atlanta, Ga. Project A covers 22 miles of main streets; project B includes 38 miles of the secondary and feeder streets.

The plant used by Eller and Olsen to produce material for contract A has a 2,000-lb. pug mill that can produce at the rate of 600 to 700 tons per 10-hour day. The contractor uses a Barber-Greene spreader to lay this mix.

On project B the contractor uses a drum-type mixer of 6-ton capacity with a production rate of 700 tons per 10-hour day. An Adnun spreader lays this mix on the street. Both spreaders will lay a strip which varies from 8 to 12 feet.

Surfacing Rolled Four Times

The streets all receive a tack coat of RC-3 asphalt at a rate of 0.05 gal. per sq. yd. The surfacing is rolled about four times with a 10-ton Buffalo-Springfield roller. We apply a 1½-in. top on a 1½-in. binder which makes a total of 3 in. over the gutter, thus reducing the effectiveness of our curbs somewhat, though our curbs are usually about 9 in., which leaves an adequate height of curb face. In some cases, however, we have reduced our

A Barber-Greene paver lays a binder course on a portion of the city's street improvement work.

An Adnun paver lays a similar course on a second section of the project.

curb to as little as 3 in., and it may be necessary to lay additional curb on some streets.

We are developing a program of maintenance for these streets. We are not sure now how often it will be necessary to seal them, but we anticipate giving them a treatment at least once every five years, and possibly at more frequent intervals if it appears necessary. This sealing operation will consist of a light application of asphalt, probably about 0.1 gal. per sq. yd. of RC-2, and a layer of sand of about 10 lbs. per sq. yd.

The bond issue will pay for all operations, and will be repaid from the general fund.

A typical sample of the sheet asphalt, limestone, and sand hot mix used on this project analyzes thus:

Passing ⅜-in. screen	5.0%
Passing #4 screen	22.2%
Passing #10 screen	33.6%
Passing #40 screen	22.6%
Passing #80 screen	3.6%
Passing #200 screen	5.4%
Bitumen	7.6%

The mixture has a specific gravity of 2.092 and a Hubbard stability of 2,700 lbs. at 140°F.

Chlorinate out the Manganese

The Montebello filter plant in Baltimore, Md., experimented with chlorine residuals as high as 0.60 ppm and solved a difficult water problem

BREAKPOINT chlorination will eliminate manganese as well as improve bacterial reduction and reduce taste and odor complaints. This has been the experience of F. E. Edward and George B. McCall, Sr., assistant superintendent of water treatment and junior chemist of the Baltimore water department, as related in a paper delivered recently before the Maryland-Delaware Water and Sewerage Association.

Presence of excessive manganese is seasonal in this plant from July through October, with the difficulty usually being alleviated by ferrous sulfate and lime with a resultant pH of 9.0. However, lack of ferrous sulfate in 1943 made it necessary to find another method. Studies by Erickson and Veatch (Journal AWWA, December 1937) indicated the effectiveness of chlorine for this purpose; earlier studies by Carl Zephfe (Journal AWWA, May, 1933) showed how to convert manganese into stable oxides.

The Erickson and Veatch studies showed that the use of chlorine, aeration, and contact beds before filtration removed 35% of the manganese; the settling basins, another 15%; and the final sand filter, another 45%. The Zephfe experiments passed water upward through pyrolusite (70% MnO_2) and sprayed the overflow on coke beds. This converted the manganese to manganese hydroxide and manganese dioxide, both stable. To adapt these to the Montebello situation, the operators, since they had no aeration or contact beds, substituted chlorine as an oxidizer and sand beds for the contact.

In January 1944, the plant reduced its chlorine dosage from 0.57 ppm to 0.078, largely as a chlorine conservation measure. This reduction resulted in the same residual of 0.31 ppm, but it took 10 minutes to form. Also, with the reduction of chlorine, manganese appeared in the chlorinated water. Tests indicated that the residual actually was 0.05 ppm chlorine and 0.25 ppm chloramine; they further showed that an increase in the applied chlorine was necessary to obtain a true chlorine residual.

Dosage Increased Gradually

With these factors in mind, plant officials abandoned the chlorine conservation measure and increased the dosage to 1.8 ppm by gradual steps. This caused a decrease and then an increase in the residual as the breakpoint was passed. The analysis of the residual showed it to be 0.30 ppm chlorine and 0.04 ppm chloramines and further showed that the manganese was reduced to zero. This suggested that larger amounts could be eliminated during the summer.

As a result, in July, during the season of excessive manganese, the operators maintained a dosage of 1.75 ppm and were able to maintain a residual of 0.4 to 0.5 ppm through July and August. However, in September and October the residual dropped and in October went to 0.19 even with a chlorine dosage of 2.6—top capacity of the chlorinators. Difficulty with the reservoir caused by its "turning over" further complicated matters and created objectionable tastes that had to be eliminated by activated carbon. The ferric sulphate and lime treatment has to be used also to help correct the situation.

The experience showed that Montebello could remove manganese by chlorine if sufficient apparatus were available. The addition of three Rotameters, two of 2,000 lbs. per day and one of 6,000 lbs., enabled the operators to supply 4.5 ppm and maintain a true 0.4 ppm chlorine residual through 1945.

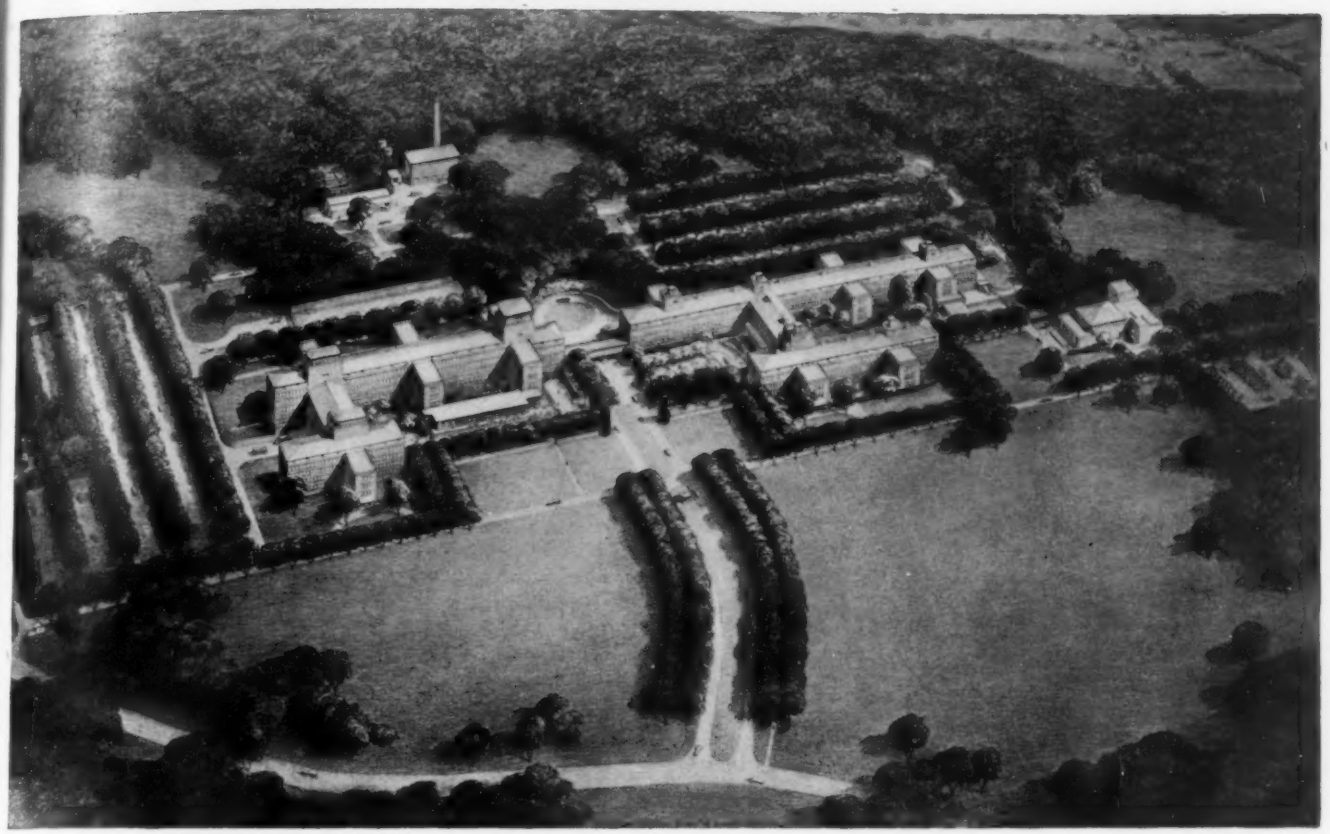
Accompanying the manganese removal by breakpoint chlorination was a decrease in bacteria and a decline in taste and odor complaints. The use of chlorine residuals above 0.25 heretofore had been considered unwise because of taste; however, operators at Montebello recorded residuals of 0.60 without customer complaint. Actually an increase in average residual from 0.17 in 1940 to 0.37 in 1945 cut the consumer complaints from 516 in 1940 to zero in 1945.

Cost analysis showed a saving of 18 cents per million gallons by use of the breakpoint method. Using 4 cents per lb. for activated carbon and 2.4 cents for chlorine, the carbon-chlorine treatment cost $0.82 in 1939 as compared with $0.64 cents for the chlorine alone.

Area County Zoning Authority Permissive Legislation: A Correction

IN ANSWER to a letter received from Kenneth L. Schellie, Director of the Indiana Economic Council, Indianapolis, regarding the area county zoning authority as it applies in Indiana, William W. Kelly, Sr., Executive Director of the Hamilton County, Ohio, Regional Planning Commission, wishes to make the following correction in his article, "Zoning of Unincorporated Areas," which appeared in the July issue of THE AMERICAN CITY:

"Mr. Schellie is correct in his interpretation of the Indiana County Zoning Law when he mentions that the area county zoning authority is *not* restricted in Indiana to counties within a specified population range. As we understand it, it is permissive legislation, available to any county wishing to make use of such authority. Our staff's comparison study classifies Indiana correctly in this respect, but in my article this state was inadvertently included among those having the density restriction."



Th Bell Telephone Laboratories, situated at Murray Hill, N. J.

Research Moves to the Country

Types of non-nuisance industry suitable for carefully zoned residential areas.

By RALPH WALKER
Voorhees, Walker, Foley & Smith
Architects, New York, N. Y.

A CONSISTENT movement to country sites has been going on among many types of non-nuisance industry. It is another and obvious form of decentralization and is caused by the same factors that bring about the outward movement of population. Some industries, for example, are developing research laboratory centers in rural suroundings. The Bell Telephone Laboratories at Murray Hill, N. J.; E. I. du Pont de Nemours Company's Research Center outside Wilmington, Del.; the General Electric Research Laboratory outside Schenectady, N. Y.; and the Ford Research Center at Dearborn, Mich., have all sought ample present room as well as provisions for generous future expansion. As one laboratory director phrased it, they are seeking a more intellectual atmosphere, and the exterior amenities of a small college campus.

Mr. Frank A. Howard, while president of the Standard Oil Development Company, programmed three factors which finally led to a change of site—to a plot where:

1. There were untrammelled possibilities for future expansion. It was realized that the basis of good planning is to develop freedom for future movement without hindrance from present opportunist-placed obstacles. Three times as much room for expansion as is considered necessary should be allowed.
2. The development of a sense of entity was possible, i.e., an individual physical quality in plan and appearance could be developed which would indicate a desirable place to work.
3. All the amenities that could be justifiably included were possible, keeping in mind the fact that working conditions have greatly improved in human quality in the last 25 years and, no doubt, will improve as much again in the next quarter century.

One of the leaders of a great laboratory project said, in requesting consideration of further amenities in a new project: "We have estimated that these amenities would cost, over and above the bare necessities, a mere one-half of one percent of our annual operational expenses. We think that with the type of employe we desire this expenditure will make for both better thinking and better work."

To Prevent Future Industrial Slums

The non-nuisance industry which desires to move to the country must be prepared to meet advanced zoning and planning requirements set up by forward-looking communities, and where these requirements do not exist should help bring them about. Industry should recognize that this is a long-view protection of its own interests as well as those of the community as a whole. It is obvious that the very features which led to the move to the country must be protected. Every precaution should be taken by both industry and municipality not to create future industrial slums.

Temporary advertising value along major highways can soon be lost entirely if the rest of the development on

the highway is devoted to hot dog stands and other roadside nuisances which decorate the usual national or state highway, especially where industry and business follow a ribbon development. Highway notoriety has little value to a well-established industry and, where sought, will have but momentary worth and lead eventually to blight, high land costs, and decaying communities.

The rural community which invites an industry into its borders should think of future tax stability in a well-rounded municipality and insist that the industry have a position of integration. If industry, specialized business, is well balanced in the community, better schools can be provided and it will be possible to have a more thoroughly rounded income society without tax loss. Too many suburban towns and villages are finding, as does Rye, N. Y., that apartments and cheap homes without industry result in insufficient taxable income to meet operating costs for the municipality.

Again, communities adjacent to large cities may find in a judicious placement of non-nuisance industry a solution to the problem of maintaining on the tax rolls some of the large estates, now unused but as yet not ripe for development in small residential plottage.

If an industry is welcome, it and the municipality should create agreements advantageous to both. Zoning ordinances should be changed for their mutual protection, and the area to be occupied should be designated as a special industrial or business area, permitting a non-nuisance type only, and also permitting the growth of further industry as controlled variations under permission of the municipal government. The zone should be set up with definite restrictions against haphazard business developments as if the residential character had not been changed.

If possible, the industry should buy sufficient property not only for all building needs, but also for the care of foreseen employe parking, bus terminals, and truck loading facilities. The opposite side of the road on which the site faces should also be bought. This can be later used for homes for persons of moderate income, and thereby insure a stability of neighborhood.

A Check List for Site Selection

Sites should be chosen which permit entrances and exists which will not create further traffic hazards in the community. The municipality and the industry should study together the traffic problems and plan the means for taking care of the normal peak traffic loads which the industry will bring to the neighborhood. It must be remembered that the new enterprise will bring as many, if not more, automobiles to the community from outside as is normal in the community itself. Industry might well make a study of where most of its employes live and be guided by it in site selection.

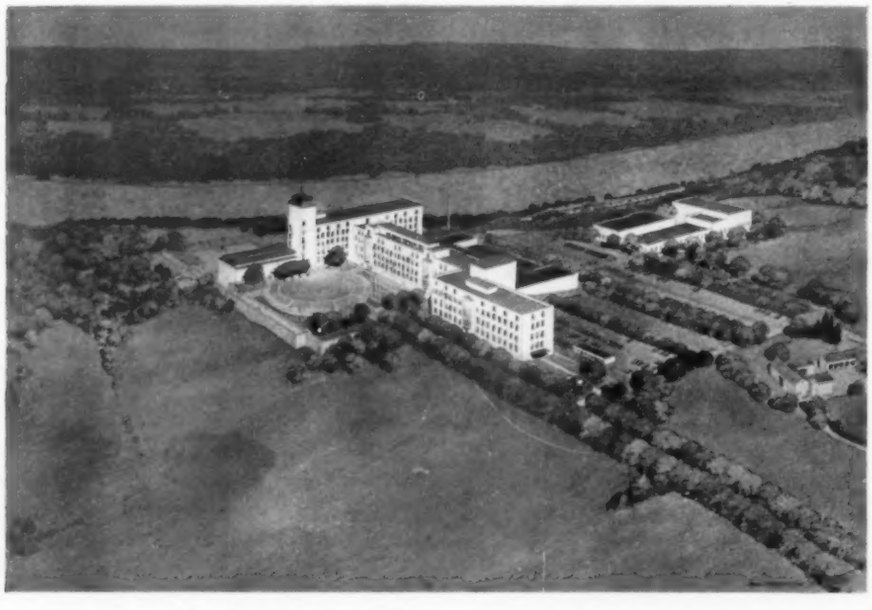
Before looking for any site, management should prepare a careful program of requirements especially relating to size of buildings and type and quantity of private and public utility needed. It should also make a very careful check list of things to look for in site selection, i.e., desirable qualities —or those which will later cause a great deal of additional expense.

This check list should invite comparative data, i.e., characteristics and size of site, topographical factors, neighborhood facilities, public and private utilities, transportation, character of other industries, number of employes and their skills, and housing.

Documents for Prospective Buyers

The following are documents a prospective buyer should obtain for each site under serious consideration:

1. Title search
2. Map showing transportation facilities within 10-mi. radius
3. Zoning map
4. Topographical survey
5. Master plan showing proposals of local planning body. This should include regional studies if available
6. Data on test borings showing subsoil conditions. Existing data on adjacent properties will probably be adequate, at first
7. Aerial or other photographs:
   (a) The site
   (b) The community
8. Rate schedules for:
   (a) Water
   (b) Gas
   (c) Electricity
9. Zoning ordinance
10. Building ordinance
11. State labor laws and state construction laws
12. Publications from Chamber of Commerce
13. Federal proposals concerning the development of natural resources within the region:
   (a) River straightening or dredging
   (b) Harbor improvement
   (c) Water conservation and drainage of swamps
   (d) Reforestation



General Electric Co. research laboratory, The Knolls, Schenectady, N. Y.

U. of D. Opens School of Architecture and Planning

THE urgent need for a School of Architecture and Planning in the Colorado and Rocky Mountain region is being met by the establishment of such a school at the Civic Center campus of the University of Denver, Chancellor Caleb F. Gates of the University has announced.

Because of the great demand from prospective students and local architects, the new school will offer 5-year programs for degrees in architecture and planning in the College of Arts and Sciences.

Carl Feiss, formerly planning director of the planning commission of the city of Denver, now planning director of the department of development at the University of Denver, and previously in charge of the planning and housing division of the Columbia University School of Architecture for six years, has been named director of the new school.

Biloxi's Wartime Sewage Treatment Plant

Good design despite crippling wartime restrictions made it possible for this community to build a plant that produces a high degree of treatment.

IT TOOK 250 years for the sun-kissed little city of Biloxi, Miss., to grow to a modest 12,000. Then, in only 4 or 5 years it jumped to 24,000, or 40,000 counting military personnel. Keesler Field, an army air technical training school located in Biloxi, was the reason for the sudden growth that changed Biloxi from a small, leisurely southern city with a pleasant climate and disposition to a bustling community playing an important role in the war.

The city's growth in population required the revision and improvement of the sewage collection and disposal system. This was especially important because the health of military personnel was involved. The city already had a good supply of utilities such as water, gas, storm sewers, and paving, but disposed of its sanitary sewage by individual septic tanks and cesspools. This system worked fairly satisfactorily for the pre-war population, but with the great increase in population the septic tanks no longer proved reliable, and the effluent that they discharged became a menace. Biloxi is situated between a sound and a bay, and the beaches are as much a part of its life as the streets. Industries like shell-fishing play an important economic role in the community's life, and consequently any treatment plant built to serve this city required, first of all, a high degree of treatment.

Before being discharged the sewage passes through this baffle contact tank. A concrete channel around the far side supplies a by-pass if desired.

Minimum of "Critical" Material

However, wartime is not an ideal time to put in a plant that is complete in every detail, so Consulting Engineer Albert A. Brensley of Kankakee, Ill., designed his collection system and treatment plant with spartan simplicity, supplying sewers to only the most densely populated areas for about 12,000 people. This plant, with a hydraulic capacity of about 1.2 mgd, was built with a minimum of critical material. Most of the equipment is manually operated. Clarifiers are built without reinforcing steel and are hopper-bottomed for gravity collection. Sludge tanks are similarly designed along a modified Dortmund pattern.

The plant incorporates separate sludge digestion and trickling filters to give a high degree of treatment. It operates by directing the sewage first through a grit chamber and into a wet well in the pump-office-control building (7 ft. 6 in. x 16 ft. x 17 ft. deep). From there it is lifted 31.75 ft. to the primary tank inlet chamber through a 12-in. force main. These tanks, of the modified Dortmund type, measure 28 ft. in diameter at the top and 4 ft. at the base; they have an overall depth of 28 ft. and a top vertical sidewall depth of 7½ ft. These tanks will retain the sewage for 2½ hours at design flow.

The sludge from these tanks goes by gravity through 6-in. lines to a raw sludge pit with swinging gate that in turn directs the sludge to the digestion tanks. These tanks, also hopper-bottomed, measure 35 ft. in diameter at the top, have an 18-ft. vertical sidewall depth, and an additional 5 ft. of depth with sloping sidewall in which the base narrows to 4 ft. in diameter.

The design of these digestion tanks is severely simple. Lacking heating coils or cover, the tanks depend upon the Mississippi sunshine to perform the digestion and maintain the optimum digestion temperature. However, the design allows covers to be added in

One of the primary clarifiers, the dosing tank, and the two trickling filters.

the future as material becomes available. The digested supernatant flows by gravity to the digester control pit and then back to the influent line, where it is combined with the raw sewage. The sludge flows by gravity through a 6-in. line to the sand drying beds.

The effluent from the primary tanks flows through an 18-in. line to a dosing chamber. From there it passes through a 15-in. line to a pair of rotary trickling filters, each measuring 120 ft. in diameter and having a 7-ft. depth with ceramic underdrain blocks; there are 67 rows of these blocks at 10½-in. centers in each quadrant.

From the trickling filters the sewage flows to the final tanks through a 21-in. line. These tanks measure 28 ft. in diameter at the top and have a 15½-ft. overall depth. The vertical sidewall depth at the top is 3½ ft., and the bottom diameter is 4 ft.

Four-inch sludge lines draw the humus from the final tanks to a control pit, and from there a 6-in. drain line transfers it to the wet well of the pump house. Here the pumps will put the sludge either into the digesters or the primary tanks. General practice has been to put it into the primary tanks to aid in settling and to avoid difficulty that might arise when mixing this thin secondary sludge with the relatively heavy primary sludge.

The final settling tanks — note the hand-operated gate which symbolizes war emergency construction.

Effluent from the final tanks goes through a 21-in. line to a hopper-bottomed chlorine contact tank with over-and-under baffles. A 4-in. drain line from the contact tank goes back to the wet wall. The tank contains 6 wood baffles spaced 3 ft. on centers and has a trough around the edge for by-pass. A Wallace & Tiernan chlorinator supplies the final disinfecting treatment. The tank has a v-notch that measures the flow. This, incidentally, is the only flow-measuring device in the plant. An 18-in. outfall carries the effluent from the contact tank to bayou.

The project was constructed as a FWA project, with a $1,036,000 allotment that was made available after the project had been certified as essential to the war effort. More than 56 mi. of sewer main were installed, including force mains, laterals, connections with 5,950 dwellings, and a central and 2 outlying pumping stations.

Subdivision Control Over Water and Sewerage

NEW YORK state law places definite controls over water supply and sewage disposal for new residential subdivisions that prove of active benefit to the localities, according to J. Franklin Bonner, Secretary of the Monroe County Planning Commission, Rochester, N. Y. These controls are as follows:

1. Anyone contemplating a subdivision development involving housing for ten or more families must file a map with the County Clerk that has been certified by the State Commissioner of Health.

2. On the map presented for certification there should be shown a sketch of a typical sewage disposal system if septic tanks are to be used. Where municipal water supply and sanitary sewers are available, these facts are to be submitted together with a statement from the official body or corporation supplying such services to the effect that the services are available and will be supplied.

3. Where individual wells are used for water supply, they are required to be at least 75 ft. and usually 100 ft. from the nearest portion of a tiled disposal field.

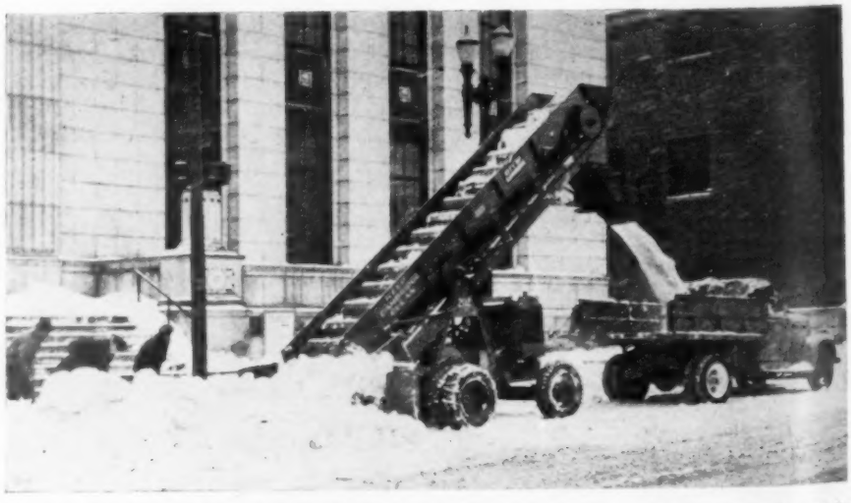
4. The tiled disposal field must be entirely within the same parcel of land and not closer in most cases than 15 ft. to the property line.

5. In general septic tanks must have a minimum capacity of 500 gals.

6. The area of individual tile disposal fields is determined by soil percolation tests.

Mr. Bonner reports that occasionally a subdivider will attempt to evade the law by filing a map with lots sufficient for nine families. Under New York law the State Department of Health takes no action until the subdivider adds another lot or group of lots, at which time he is required to show that the tile fields, the septic tanks and the well fields meet these requirements.

Snow Loader Digs Cambridge Out



Cambridge, Mass., had a time keeping up with its snowstorms last winter. Here is a Haiss snow loader attacking a windrow of snow piled along the gutter line at the same time that the weatherman is sending down an additional quota. Wm. P. McMenimen, superintendent of streets, is in charge of street cleaning at Cambridge.

Tax Incentive for Rebuilding Blighted Areas

A New Proposal Discussed

ANY owner who tears down an old structure and puts up a new one would be allowed to deduct the value of the old building from that of the new for local tax purposes under a proposal advanced on July 29 by Herbert U. Nelson, executive vice-president of the National Association of Real Estate Boards.

This deduction would hold until the value of the old improvements had been wiped out. This is a write-off system that compares with that which the federal government used on war buildings for war industries, Mr. Nelson explained.

Practically, the plan would work this way: If an owner had an old building, at present assessed for $5,000 on the local tax books, and built a new structure worth $10,000, he would be assessed for only $5,000 on the new building for a period of years sufficient to wipe out the $5,000 value of the old one. This plan would apply to all kinds of buildings and not just to housing. It would permit rebuilding of every type in accordance with city plans and current needs. Much slum land, for instance, should now be rebuilt, not for housing but for commercial, industrial, or other uses.

"As far as owners are concerned," said Mr. Nelson, "they will have decided incentive to go ahead with the rebuilding program on the location of old structures which they have, instead of moving to the suburbs. Tax assessments in the close-in areas, where much of the blight exists, are an important consideration in any plan for new construction. Assurance that an owner will not be penalized for putting up a new building by being taxed for its new value and at the same time having to take the loss of discarding the old improvements will permit many of the small owners of slum and blighted property, now caught in a vise between high taxes and high building costs, to move ahead."

Comments on the Foregoing Proposal

By John A. Zangerle
County Auditor, Cuyahoga County, Cleveland, Ohio

EXEMPTION of a partial value as suggested by Herbert U. Nelson will, of course, tend to stimulate production of homes.

Exception of an amount equivalent to the existing assessed valuation, when a new structure is erected, is an exceedingly cumbersome method from a practical standpoint, however. It would require annual individual accounting as to each structure, assessable each year with reference to the year it was built. There are very few appraisers who now annually depreciate structures and who annually appraise land values *de novo*.

If exemption of a partial value tends to stimulate production, exemption of the entire value would still more tend in that direction. Logically,, therefore, the entire value should be exempted, and the longer the better.

Perhaps, under the circumstances—viz., the desire not to diminish the aggregate tax duplicate value—it would be better to exempt 50% of the value (rather than to freeze the existing value of the old structure). Thus we would forget the old assessment for a destroyed building — an anachronism to say the least, and probably illegal.

We are discussing a desirable taxation policy for stimulating building construction; however, the lack of building today is not due to the high cost of construction or to high annual maintenance charges. Inability to obtain materials, lack of industrial production, labor strikes and inefficiency, shorter hours, OPA national policy and a host of other factors are today weighing more heavily against the building industry than is the real estate tax. Builders now want to build, consumers want to buy, are willing, indeed, to pay almost any price demanded by them.

Constitutionality Questioned

It is also questionable whether the valuation of some property under existing constitutional limitations which require taxation according to value would permit some property to be assessed at its true value and some at less than its true value. If the exemption were uniform, applicable to all properties, old and new, or even to a class of property such as residential, there might be little question, in my opinion, as to the legality of such a move.

Mr. Nelson argues that such a proposal "will permit many of the small owners of slum and blighted property, now caught in a vise between high taxes and high building costs, to move ahead." The fact is that slum properties are generally assessed at a very low figure. If the buildings are assessed according to federal depreciation rates, they are generally charged off within 33 to 40 years. Slum and blighted properties are generally 50 years of age or older. They sell for very little. Only where the assessor uses dictatorial power of maintaining at all events a residual building assessment is there any assessment retained on slum property, generally speaking. Logically, such areas should show generally no building assessment.

Slum or blighted property can only be developed in a larger way, either for parks or playgrounds, or large developments of public housing or redevelopment of new sub-centers, or multiple-dwelling units on a large scale. Small owners of slum and blighted property will, therefore, not move ahead. The land values of such districts will increase because mass development will be more profitable.

By Edwin H. Spengler
Professor of Economics Brooklyn College

THE primary purpose of a tax is to produce public revenue. Partial or total exclusion from the scope of a tax of privileged properties, persons, or transactions logically belonging within the tax base, reduces the yield. Any proposal for tax exemption is viewed as the effort of some economic or political pressure group to advance its own interests at the expense of the public treasury and is therefore held suspect. To be sure, some tax exemption schemes have served successfully to stimulate activities leading to desirable economic and social goals. This has been the case particularly where the end attained through tax exemption has substantially lowered the need for more revenue. The offer of reduced unemployment insurance tax

rates to firms that maintain a high level of employment belongs in this category.

The proposal by Herbert U. Nelson to extend the tax exemption principle through the use of a write-off system on the value of the old improvement appears to offer some incentive for the rebuilding of blighted areas. Assuming that an inducement might be necessary to justify redevelopment of close-in areas, what can be said concerning the probable effect of the proposed tax exemption upon property tax yields?

Application to Specific Cases

Would Mr. Nelson limit such exemptions to excesses above the current assessed value of improvements or would he allow a full deduction of the depreciated value of old buildings from the cost of new structures? If the latter policy were followed, a building worth $10,000 which is replaced by a new one costing, say, $12,000 would leave a taxable base of only $2,000 for the new improvement. A well-built, although somewhat obsolete structure, assessed for $175,000 might be dismantled to make way for a smaller, modern building involving construction costs of $150,000. In the latter example the entire tax base on the improvement would, for the time being at least, be erased.

Moreover, unless the application of this plan were definitely restricted to parcels in blighted areas that were in the worst state of repair, the greatest inducement for redevelopment projects would be offered to investors in the better properties rather than to the owners of low-grade structures. Assessed value of old, dilapidated buildings are low and reflect the current inadequacy of the improvement. Thus, the assessed value of an old-law tenement might be $12,000 while a somewhat more modern multiple dwelling might be valued at $50,000. If both owners should consider replacing the existing structures by identical buildings, each costing $60,000, the tax subsidy offered to the latter investor would far outweigh that given to the former one. From the social standpoint the emphasis here is in the wrong direction.

Absorbing the Subsidy

Mr. Nelson has not indicated the rate at which the write-off of the value of the old structure would apply, but it is evident that a relatively long period is contemplated before the value of a new improvement would be fully taxable. Without disputing the desirability of redevelopment projects and the necessity of modernizing older sections of a city, it should be realized that few municipalities could afford to subsidize new construction to this extent. In most instances a rise in the basic property tax rate would be required or, wherever possible, an upward adjustment in assessed valuations of other land and buildings. Aside from the fiscal and legal problems involved, the effect of this shift in the tax burden from exempt to taxable property owners would be to exaggerate some of the inequities of local property taxation.

Final judgment concerning the merits of this proposal must be reserved until further details are made available. However, regarding the basic outlines of the plan, Mr. Nelson must be prepared to show that:

(1) the plan will involve no substantial reduction in revenue to local municipalities;

(2) the improvements will contribute such broad economic and social gains as to justify special tax treatment; and

(3) the redistribution of tax burdens arising from the tax exemptions will result in a property tax system at least as equitable as those now in operation.

By Harold M. Groves
Professor of Economics
University of Wisconsin

MR. NELSON'S proposal is designed to provide an incentive for building replacement. It is a variation on other proposals and practices providing an incentive for new building. Both are more limited and probably less equitable than an established policy of full or partial exemption of improvements from the property tax.

First reaction to the proposal is that it should not be applied, if at all, until new building needs stimulation. While shortages of men and material are the limiting factors in building, remedial programs must be applied to the supply rather than the demand side of the problem.

I am inclined to view with skepticism temporary and sporadic provision of tax incentives. They are very susceptible to political abuse and may not be as effective as hoped. I should prefer a new ordering of the tax system, with special attention to the incidence and economic effects of the members. The new order might well favor improvements in the property tax base, by taxing them at a lower rate than land value.

New York State Completes Local Fiscal Affairs Examination

COMPTROLLER Frank C. Moore, of the New York State Department of Audit and Control, has announced that since he assumed office on January 1, 1943, the Division of Municipal Affairs of his Department has set an all-time record by completing the examination of the fiscal affairs of every one of the units of local government subject to supervision by the State Comptroller. His staff has completed 8,647 examinations, compared with a total of 4,488 full or partial examinations made in the 36-year period from 1906 through 1942. Altogether there are 9,794 units of local government under the Comptroller's supervision, including 5,237 school districts in the state.

In 1943 the State Comptroller reorganized the Division of Municipal Affairs and established for the Examining Section to major objectives: (1) examination, by July 1946, of every unit of government under his supervision, and (2) development of a permanent system which would insure the examination of each individual unit at least once every two years thereafter.

The state was divided into seven areas. A team of examiners, under the supervision of a principal examiner, was assigned to each area. Each team was then given an annual quota, which has been increased steadily as the new system proved capable of producing more examinations each year. Training schools were inaugurated in 1944 to aid municipal examiners in the performance of their duties. They were instructed in the operation of local government and the correction and improvement of local fiscal practices.

The examiners are required to discuss their findings with local officials before transmitting their reports to the Department. "Through these conferences, the examiners avoid possible errors in their reports and local officials learn correct procedures," Comptroller Moore has said.

Examining procedures have been so improved during the last three years that hereafter every municipality and district subject to the Comptroller's supervision will be examined at least once in each two-year period, according the announcement.

Aids and Snags to Veterans' Housing

(Continued from page 5)

Expressing confidence that the bill is far from dead and that in the end it will be enacted, Mr. Wyatt said:

"The pressure on the Congress in the closing days of the session prevented complete hearings by the House Committee. I am confident that if complete hearings had been held, the bill would have been reported favorably and passed by the House—as it was by the Senate, with virtually no dissenting votes.

"The failure to enact S. 1592 is a severe blow to the Veterans Emergency Housing Program, chiefly because we relied on it so heavily to provide vitally needed rental housing, particularly for veterans in the low and middle income brackets. It makes our job that much harder and in the end —if we are to meet the goals of the Emergency Program as well as meeting the housing problems of the nation as a whole—we must have such legislation.

"If a special session of Congress is called, we hope and expect that the Wagner-Ellender-Taft bill will be high on the calendar. If there is no special session, we will ask for this legislation as soon as the Congress is convened in regular session."

Raymond Foley, Commissioner of the Federal Housing Agency, writes in the selling price on the first "Held for Veterans" sign to be posted on new houses. (See space for it on lower right hand corner of the poster reproduced at the bottom of column 1.) Those looking on are (left to right): Wilson Wyatt, National Housing Expediter; John Motley, Congressional Information Officer, NHA; L. R. Legendre, Assistant National Adjutant of the American Legion; Jack Hardy, National Commander of American Veterans of World War II; Wesley Pearce, National Housing Officer, Veterans of Foreign Wars; William L. Batt, Middle Atlantic Regional Vice-Chairman, American Veterans Committee; Markley Shaw, Locality Housing Expediter, Washington Area. Holding the sign is Clark Daniels, representing Standard Properties, builders of these houses at East Pines, Riverdale, Md.

New Placards to Help House-Hungry Veterans

STATE and district offices of the Federal Housing Administration are handling the national distribution to builders of half-a-million new "Held for Veterans" placards which must be conspicuously posted in front of each apartment building or home under construction within 5 days after work begins.

The red, white, and blue signs are the first move in a vigorous drive to label for veteran house and apartment-hunters all new construction under the Veterans Emergency Housing Program. Helping to combat the black market in real estate, the placards state that the housing accommodations posted will be held for veterans during construction and for 30 days after completion in the case of rental dwellings, or for 60 days thereafter in the case of houses for sale, at ceiling price or rent approved by the FHA. The ceiling prices and rents are subject to changes which may result from conditions beyond the control of the builders, and should not be considered as representing the value of the dwelling or the apartment but merely as a limit on the price or rent to be charged.

HELD FOR VETERANS
during construction and for 60 DAYS
after completion this dwelling will be held
FOR SALE
to veterans at a ceiling price of $_____
approved by the Federal Housing Administration
VETERANS EMERGENCY HOUSING PROGRAM

The Racket in Veterans' Housing

VIGOROUSLY condemning the "nation-wide orgy of jerry-building and poorly planned construction," Mrs. Samuel I. Rosenman, chairman of the National Committee on Housing, in a recent article warns that, eventually, not only veterans but the whole American public will have to pay the bill of inflated building costs created by the present enormous housing demand.

The solution, she declares, to the veterans' plight, and that of the whole home-hungry American people, is more *rental* housing. Some excerpts from her article follow:

"Under present plans, only a small portion of the veterans' emergency housing is being built for rental purposes, and the bulk of it is to be sold to individual purchasers. This proportion should be reversed.

"True, the veteran will have to pay more rent today than he would for a comparable house built before the war, but he will not incur responsibilities that he may not be able to maintain, or tie himself down permanently to an unsatisfactory house. If he loses his job, has to move to another city, or requires more space for a growing family, he will not be stuck with a house and mortgage.* While renting, he will still retain for 10 years the privilege of buying a home under the GI Bill, and, later, when prices have become stabilized, he may do so without being victimized. . . .

". . . We should construct thousands of small houses and apartments for rent. There is an enormous permanent demand for such rental housing. This demand has been with us for many, many years and exists particularly at the price levels required by average veterans. . . .

" . . . If rental housing could be given the same kind of tax-free, fast-amortiza-

* EDITORIAL NOTE: As Mrs. Rosenman pointed out, a mortgage holder can get a deficiency judgment against a person who abandons a house for the difference between the deflated resale price of the house and the unpaid mortgage.

tion break that was given industrial plants during the war, and is now being granted to new construction materials plants, investing builders would soon leave the side lines and start giving us a really sensible solution to the housing problem."

A Plea to Municipal Officials and Mortgage Lenders

Mrs. Rosenman urges stricter regulations and higher standards, however, which, she states, are needed everywhere to safeguard all types of new housing from becoming a curse instead of a blessing. She points out that state building codes and site-planning regulations must be framed to protect lands not controlled by municipalities if building codes or zoning restrictions are to be observed in outlying districts. "The mortgage lenders," she adds, "could also perform an invaluable service to veterans and the public by requiring honest construction, rooms of adequate size, and agreeable site-planning as requisites to loans. . . ."

Concluding, Mrs. Rosenman asserts: "The boom is not yet at its peak. By switching the emphasis of our construction program to rental housing and insisting upon wiser planning and better building, we can still avoid catastrophe and really alleviate our housing needs. If we do not do this, we shall wake up from our binge a few years hence and find ourselves the unhappy proprietors of thousands of new slums which will plague us esthetically, socially, and financially for decades to come."†

†Reprints of the complete article "The Racket in Veterans' Housing," which appeared in *The American Magazine* for September, 1946, may be obtained from the National Committee on Housing, Inc., 512 Fifth Ave., New York 18, N. Y.

Chamber of Commerce and Red Cross Chapter Obtain Veterans' Housing

HOW cooperation can help solve the housing problem faced by veterans in communities throughout the country has been demonstrated in Spencer, Iowa, where the joint effort of civic leaders, the Chamber of Commerce, and the Clay County Red Cross Chapter obtained prefabricated homes for ex-servicemen and their families.

Thirty neat basement-and-bedroom homes have been purchased by the city through the Chamber of Commerce from surplus housing available in Kingsford Heights, Ind., a former war plant site. The houses, sold for an average of $4,000, were put up on city lots sold by real estate dealers without commission.

Emergency Housing Committee Organized

Red Cross participation in the project began last fall. Veterans streaming through the offices of Chapter Chairman Claire Wahlstrom begged for help in solving the uniformed returnees' most desperate problem—finding a decent place for their families. Until a few months ago Mr. Wahlstrom protested the housing shortage, along with the rest of Spencer. Late last year, however, the Clay County Chapter took the initiative in the appointment of a committee to make a survey and recommendations, and take appropriate action for the alleviation of the unbearable housing situation. Patriotic and civic clubs were approached. Representatives of various groups attended the chapter's housing meeting. The result of the discussions was a Housing Committee of five, including the Red Cross chapter chairman. The committee sent a representative to Indiana to look into the sale of surplus prefabricated houses there. Upon their return with a favorable report, the city, the chapter, the Chamber of Commerce and the real estate dealers got busy.

Chamber Assumes Financial Risks

They discovered then that the Federal Public Housing Administration (owner of the homes) could deal only with cities. Because Iowa law prohibited the City Council from obligating city funds for housing, the Chamber of Commerce signed a contract with Mayor Dell Blake assuming all financial risks, amounting to a possible $100,000, involved in the purchase of 30 of the pre-fabricated homes.

Meantime, the Clay County Red Cross Chapter had assumed the expense of all telegrams and correspondence of the committee. In addition, the chapter interviewed veterans and obtained information as to individual family housing needs on the basis of information requested by the Housing Committee. To the delight of parents who had been refused housing because of their children, veterans with children were given first preference by the committee.

Entirely a non-profit venture, the housing has been approved by the Veterans Administration for GI loan guarantee, making it possible for veterans to buy with no down payment.

JANET CULPER

Super-Seniority for Veterans

To the Editor of THE AMERICAN CITY:

IN THE issue of March, 1946, THE AMERICAN CITY carried an article on the reemployment rights of veterans which pointed out that, while political subdivisions were not required by law to observe the reemployment provisions of the Selective Service Act, the rules and regulations might serve as a practical guide for officials.

Since then the United States Supreme Court has ruled that World War II veterans do not have claims to jobs superior to those of non-veterans. This is contrary to the steadfast position taken from the outset in the administration of the reemployment law by the Selective Service System, which has insisted that for a period of one year from the date of reemployment veterans had, as a right conferred upon them by Congress, an absolute right to their jobs, regardless of seniority held by non-veterans. Employers should proceed with caution, however, and cities desiring to follow rules applicable to private employers should note the import of the decision.

The gist of the decision is this: veteran seniority involves not only the time worked for the employer prior to entering service, but also his time in the armed forces. That is, military service is treated as though the veteran were on leave of absence. His seniority continues to accrue for the period of his military service, but it does not increase beyond this point, or become absolute.

Example: A veteran worked for 4 years for his employer before entering service, and he served for 3 years in the armed forces. His total seniority is 7 years. He can "bump" non-veterans with less than 7 years' service, but he cannot displace non-veterans with more than 7 years' seniority.

HAROLD J. ASHE
Los Angeles 13, Calif.

Baltimore Contributes to Veterans' Pensions

A NEW Baltimore, Md., ordinance requires the city to pay the pension contributions of municipal employes for the period they were absent on military duty, the International City Managers' Association reports. Servicemen who made pension payments while in uniform will be given refunds.

St. Louis Smooths Its Granite Block Streets

Old cobblestone streets provide a good base, and St. Louis covers up their roughness with a municipally-laid asphalt surface

One important step in rehabilitation is the removal of the granite blocks on the outside of the streetcar tracks. They are replaced with concrete to make smoother thoroughfares.

THE street resurfacing program instituted in St. Louis to rehabilitate old granite block streets is continuing to make main thoroughfares smooth and easy to ride on (see THE AMERICAN CITY, January 1945, p. 70). The work involves taking out the irregularities in the granite paving, priming the surface with asphalt emulsion at the rate of 0.1 gal. per sq. yd., and then applying a layer varying in thickness from 1½ to 2½ in. This differs somewhat from the usual practice, since St. Louis does not lay a binder and a wearing surface, but combines the two together in a single "resurfacing" layer. The sieve analysis of this layer is as follows:

Passing	*Retained*	*Percent*
⅜-in.	#4	25-29
#4	#10	23-28
#10	#40	23-27
#40	#80	5-6
#80	#200	3-5
	Bitumen	6-7

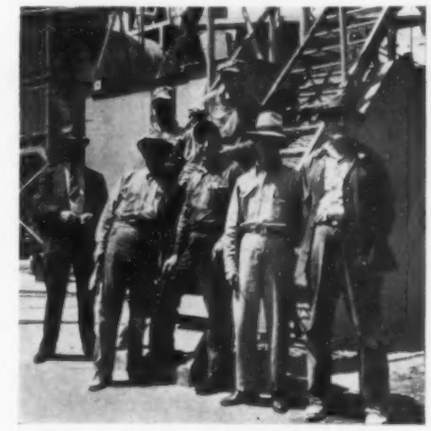
The heart of the program is the city's big electrically operated Simplicity asphalt plant capable of producing 1,000 tons of mix per day. The plant has a storage capacity of 5,000 tons of aggregate and 60,000 gal. of asphalt. The asphalt is maintained at a temperature of 325°F. by means of electric heaters. The aggregate is heated to 360°F., allowing the mixture to leave the plant at approximately 340-350°F.

Concrete slabs 8 in. thick, 8 to 10 ft. wide, and about 50 ft. long are now being installed at bus stops.

The work is under the direction of Arthur C. Meyers, director of streets and sewers, and Henry Dawson, commissioner of streets.

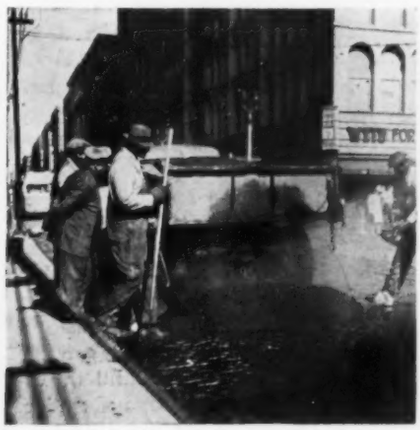
This is the big Simplicity asphalt plant that turns out the material for the St. Louis street improvement program. It is capable of turning out 1,000 tons of mix per day.

Before any street can be resurfaced, all manholes must be raised. Two workmen use a city-owned Sullivan air compressor to raise this one.



Commissioner of Streets Henry Dawson stands beside the group of workmen who help operate the city's asphalt plant.

One of the city's two Barber-Greene pavers places the resurfacing layer.



In busy downtown districts this resurfacing course is laid by hand.

A Buffalo-Springfield roller brings the surfacing layer to compaction.

The attractive building which houses the garbage-sewage disposal plant serving Marion, Ind. Note the garbage truck parked alongside the building directly over the garbage grinding unit.

How Combined Garbage-Sewage Disposal Works for Marion, Ind.

Six years of dual treatment and disposal show how this midwestern city integrates two sanitary services and capitalizes on their features

GARBAGE disposal costs money in most cities. The price may range all the way from a low of around 40 cents to a high of $3.50 per ton, depending upon the city and the conditions under which it operates. But at Marion, Ind., the garbage produces an estimated revenue of $1.00 per ton, and its disposal is in line with the strictest public health requirements.

Marion's practice, which has been followed for the last six years, is to grind the garbage and treat it with the balance of the sewage. Discounting the cost of added digester capacity and the removal of added sludge, the value of the garbage, thus ground and converted into power through the medium of gas engines, comes to $1.00 per ton. To allocate this sum fairly between municipal departments, it is transferred by the sewage treatment plant to the department of garbage collection and disposal. As the sewage treatment plant is financed by service charges and garbage collection is financed by taxes, the exchange of funds is more than a mere bookkeeping arrangement.

Marion's Findings on Procedure

This unique method of turning what customarily would be considered an economic liability into an asset has resulted in many operating developments. It has confirmed the observation that garbage is handled best by grinding it and pumping it directly to the digesters, and it has shown how this can be done best by first eliminating grit and other indigestible matter in the garbage. It has established a method of handling the garbage that is prompt, clean, and simple. It has confirmed the fact that ground garbage produces more gas per pound of volatile solids than does sewage sludge, and it has given an indication of how much digestion volume actually is required to handle the sludge.

Before looking at each of these factors separately, let us examine the workings of the plant itself. It was designed by Consoer, Townsend and Associates, Chicago, and built in 1940. It uses the activated sludge process to furnish a high degree of purification to the sewage before it is discharged into the Mississinewa River. The plant has pumping and primary tank capacity of 10 mgd.

The sewage enters the plant through a 33-in. concrete intercepter which gathers combined sewage from a population of some 30,000 plus industries. The intercepter is equipped with a bypass that will divert the sewage in case of an emergency. A sluice gate controls the flow into the plant.

For the first step in the treatment, the sewage passes through two 25-inch comminutors that effectively shred the large particles and deliver the sewage into a wet well where a battery of four Chicago pumps stand ready to lift it some 33 ft. to the main treatment units. Of these pumps, two are rated at 4,000 gpm, and one of the two receives its power from a 50-hp Climax gas engine. This engine, incidentally,

supplies the power for the bulk of the sewage that enters the plant. The other two pumps are rated at 2,400 and 1,500 gpm respectively. The original design also called for the introduction of the ground garbage into this wet well, but subsequently a somewhat altered method of procedure was followed.

Following this, the sewage passes a pair of rectangular-shaped grit chambers with proportioning wiers to hold the flow at a velocity of 1 ft. per second. At present, one of these chambers is equipped with a Chain Belt grit removal mechanism, while the other must be cleaned by hand.

The sewage then enters a preaeration tank and passes from there to the primary tanks where it is held for 1 hour and 20 minutes detention based on the design flow. A pair of Chicago sludge pumps, one a plunge type rated at 9,000 gph against a 50-ft. head, and the other, a centrifugal pump of 6,000 gph capacity against a 35-ft. head, draw the raw sludge to the two 65-ft. diameter digestion tanks, both equipped with PFT floating covers. These tanks have a capacity of 6¼ cu. ft. per capita on the basis of actual population.

When industrial wastes translated into terms of equivalent population are used in the computation, this figure drops to something less than 5 cu. ft. per capita.

The settling tank effluent then passes to the aeration tanks where it receives an average of 0.6 cu. ft. of air per gallon of sewage in winter and 2 cu. ft. per gallon in summer. These tanks will remove an average of 1.33 lbs. of BOD per 1,000 cu. ft. of aeration air used.

The aerated sewage proceeds to the final settling tanks where it is detained for 2.4 hours at design flow. Present operating procedure calls for a return of 27.5% of the sludge to the aeration tanks and the rest to the primaries. A Rex Tow-Bro collection mechanism hydraulically removes the sludge from the final tanks. The final effluent passes through an outfall to the Mississinewa River.

At present, Superintendent Backmeyer sells the liquid sludge at a price averaging $0.90 per 1,500 gallons, thus not only bringing in a revenue, but also cutting operating costs.

Garbage Grinding Procedure

In regard to the introduction of the garbage into the sewage flow, the first significant point is the method of handling. The plant has a single Jeffrey grinder that handles three tons of garbage per hour. The city forces collect green garbage once a week, instructing the householders not to wrap the garbage in paper. Each truck dumps its load on an unloading platform at the treatment plant; and the two men who constitute the truck crew shovel the garbage into the grinding hopper, at the same time sorting out tin cans, large bones, bottles, trash, or other material that may be difficult or impossible to grind. In each 10 to 12 tons of garbage, enough such material is collected to fill a 20-gallon garbage can. This material goes to the adjacent land fill area that also receives grit. The operation of dumping the truck and placing the garbage in the grinder requires approximately 10 minutes.

Perhaps the biggest single step that simplified this type of operation was the decision to pump the garbage directly to the digester, rather than to combine it with the sewage. When it was handled with the sewage, a number of difficult operating problems arose. The most immediate of these was the excessively long time required for drawing sludge from the primary settling tanks. A load of 7 or 8 tons of garbage would mean that the operator spent most of the day drawing sludge.

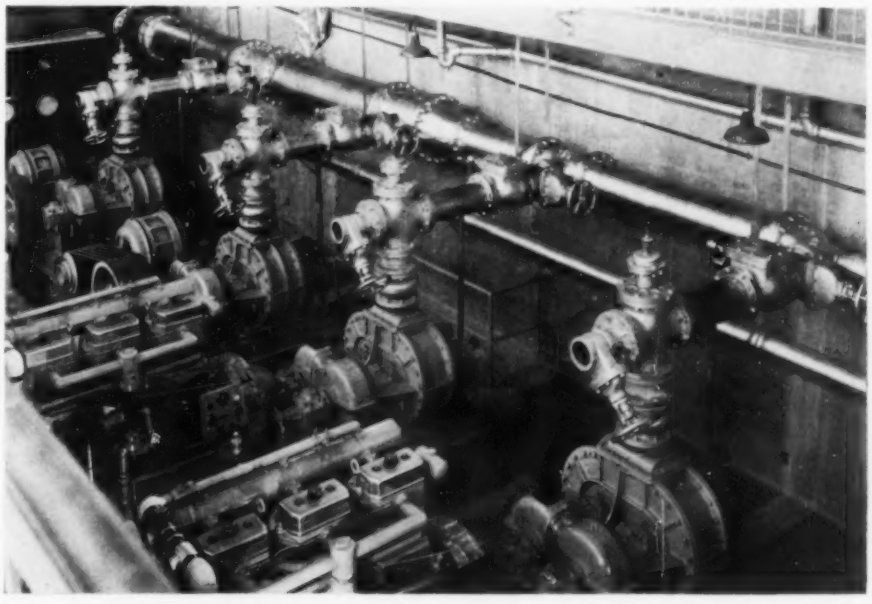
Secondary Settling Tank Problem

Another problem when the garbage was combined directly with the sewage arose in the secondary settling tanks. In the garbage grinding process, a great many colloids and dissolved solids were introduced into the sewage and were, of course, carried over into the aeration tanks and then to the final settling tanks; and, when this shock of several tons of garbage was received, Superintendent Backmeyer would note that the dissolved oxygen content of the sewage "dropped out of sight." Also, a lot of finely ground floating material would get past the grease skimmers and clog the final settling tank wiers.

To avoid this, Superintendent Backmeyer partitioned off a portion of the wet well, so that he could separate the ground garbage from the rest of the sewage. In the bottom of this wet well he placed suction lines. One, a 10-in. line, has its intake 12 in. from the floor and draws heavier settled solids and discharges them into the grit channels. A second, 6-in. line, 30 in. from the floor, removes the organic garbage. This rough separation insures a maximum of volatile solids being sent to the digester and directs the part of the ground garbage that can be handled easily by the treatment processes.

To make it easer to handle the garbage in the "garbage well" Superintendent Backmeyer installed an air line to agitate the garbage solids and prevent the formation of a scum on the surface—a difficulty that occurred frequently, especially during the corn canning season. Also, if the garbage was held in the well too long, its pH dropped, and a bag or two of lime was required to correct this deficiency.

The greatest single tangible value of the ground garbage to the plant is of course the fact that it generates gas to be used for power and other purposes around the plant. The Marion design makes use of this gas with one 50-hp Climax engine previously mentioned



Here is some of the equipment that the digester gas powers. In the center of the picture are the two Climax gas engines directly connected to two Roots-Connersville blowers. The gas also furnishes power for a heavy-duty pumping unit.

powering one of the 4,000-gpm pumps and two additional 75-hp Climax engines connected directly to two of the four Roots-Connersville blowers, each delivering 1,800 cu. ft. of air against a pressure of 7.5 psi. Superintendent Backmeyer's analyses indicate that from each ton of garbage delivered to the plant, 2,600 cu. ft. of gas having a carbon dioxide content of less than 35% by volume will be generated.

Gas is used to maintain optimum heating conditions in the digesters. Since gas generates substantially the same amount of heat whether it is ignited by a flame in a burner or by combustion in a cylinder, the engines are able to furnish the required heat both through the jacket water of the engines and from the exhaust heat from the mufflers. Through the medium of exhaust and hot water heat exchangers, a temperature of around 90° F. is maintained in the digesters.

Superintendent Backmeyer made certain studies to determined how much gas is generated from the garbage as compared with the sewage solids and reported his findings before a recent meeting of the Central States Sewage Works Association, held at Lafayette, Ind. However, his results are clouded somewhat by what he feels is a lack of digester capacity. Early in the year, when garbage production is down to a figure of around two tons per day, gas production ranges somewhat less than 49,000 cu. ft. per day. However, later in the season, during July, August, and September, the yield increases about 30% while the ground garbage load jumps some 400%.

Digestion Capacity at Marion

The question of digestion capacity is misleading in any case, he feels, since it generally is referred to on a unit volume per capita basis. Such a generalization disregards the important factors of digester temperature, industrial waste load, and character of the final digested sludge. The Marion digesters operate in series with both tanks producing gas. The temperature is maintained between 90-100° F. in the primary digesters. Sludge in the primary digester is circulated two hours each day to prevent an accumulation of undigested garbage solids in the bottom of the tank. The plant has a nominal digestion capacity of 6.25 cu. ft. per capita, and 4.20 per capita if the industrial load translated into equivalent population is considered.

Marions tests give a clue as to the amount of digestion capacity actually required. Liquor from the secondary digester containing 3% total solids was allowed to stand in 40-gallon drums for periods of 10, 13, and 24 days. Tests showed that the solids contained in this liquor would concentrate to 4.47% in 10 days, 4.98% in 13 days and 5.04% in 24 days. Thus sludge in the secondary tank now having a solids content of 3.25% would yield about one third of its volume as supernatant when the concentration of solids reached 5% in 13 to 15 days. To give the 26,000 gallons of sludge that Marion collects each day an added 15 days of digestion would require the raising of the digestion capacity from 167,200 to 219,000 cu. ft. This would give a figure of 8.2 cu. ft. per capita based on nominal 1940 population and 5.2 cu. ft. per capita when considering the industrial equivalent.

Winner, S. D., Uses Diesel Electric Set to Insure Dependable Water Supply

By ELNA B. NICHOLSON
City Auditor

TWO diesel electric sets furnish power to the pumping station serving the Winner, S. D., water department, to insure a supply of water without the danger of electric power failures from outside sources. One of these units is a 40-hp Fairbanks-Morse; the other is a 44-hp Caterpillar.

The city gets its supply of water from 7 wells located 7 miles south of the city limits. These wells are from 39 to 45 ft. deep. The engines not only supply electric energy to run the 7 Pomona well pumps, but also furnish electricity for domestic use at the well residence. The engines generate 220 volts. Each Pomona pump furnishes about 100 gpm. The average demand for water in Winner is approximately 500 gpm. The water main from the wells to the city is of cast iron 10-in. in diameter. During the winter months, when the water level rises, water flows into Winner by gravity. The rest of the year it is pumped from each well to the city, where it is stored in 3 concrete ground reservoirs. These 3 reservoirs hold about one mg of water. The distribution system has approximately 17 miles of cast iron water mains.

John Kourt, water plant engineer, stands at the control panel of the Winner, S. D., water works. The Caterpillar diesel D4400 electric set is in the foreground.

Winner's well field has a sand formation that is from 30 to 49 ft. deep, about 325 ft. wide and a half mile long. This water is unusually free from bacteriological contamination and is soft enough to make it a real civic asset.

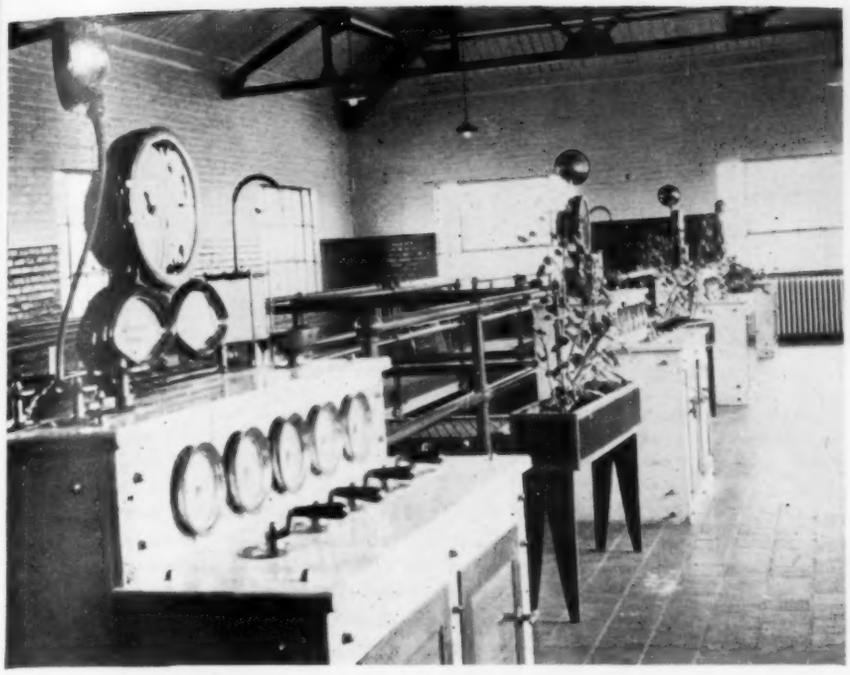
As an added service to the community, the city offers its water consumers an irrigation rate of 15c per thousand gallons. Every one of its water consumers takes advantage of this privilege. There are no restrictions on the amount of water that can be used.

Milwaukee's "Doorstep" Airport

MILWAUKEE'S PIONEERING attempt to furnish airplane facilities to the downtown metropolitan area is being watched carefully by aeronautic authorities.

Established in September of last year, the landing area located on Lake Michigan a few hundred yards from the business district is 3,000 feet long and 500 feet wide. The landing strip is 3,000 feet long and 100 feet wide. The area was sponsored by the Milwaukee Citizens Committee on Aviation and is operated under private management by A. C. Lang, a commercial operator.

The Milwaukee airport now has two T-shaped hangars and probably will have others soon.



The filter room with the Simplex control tables.

More Wells and Raw Water Storage

What Elizabeth City, N. C., did to meets its war-important water demand

THERE WERE two simple answers to Elizabeth City's wartime problem of supplying water to the important military installations located there and the personnel that accompanied them. These were first, more wells; and second, more raw water storage.

The first was apparent enough, but the second took some explaining. After all, FWA and WPB engineers argued, a city of 17,000 that had a 1-mg clearwell and a half-mg overhead storage tank ought to have reserve capacity enough to carry it through a wartime emergency; if it wanted more storage, let the project wait till after the war.

But Public Utilities Manager J. C. Parker and Water Superintendent R. W. Luther finally demonstrated to them that raw water storage, reinforced by a 3-mgd reservoir, would spell the difference between continuous, safe operation of their somewhat peculiar water supply system, and dangerous, intermittent service.

How to Avoid Salt Water

The plant is unique and has an unusual history, significant in the municipal field. Elizabeth City lies in a low, tidal flatland bordering the historic Dismal Swamp. The average elevation of the city varies between two and five feet above sea level. In 1926 the city built its water and sewerage system, drawing on the adjoining river, which was then thought to be the only available supply. The supply was not completely satisfactory because salt water intrusion began to constitute a problem, particularly during dry years when the supply of fresh water was at a minimum. It became particularly dangerous during the drought years of 1931, 1932, and 1933, when the fresh water flowing in the river virtually disappeared and the salt content rose as high as 5,000 ppm. But the last straw, as Superintendent Luther terms it, was the 1933 hurricane that blew down trees and uprooted undergrowth, which lay matted and stagnant in the river. The heavy organic content of the water, with its large amount of dissolved solids, resulted in a water that had the appearance of strong coffee and a revolting odor.

This posed the difficult problem of finding a new source of supply, since the best engineering judgment at that time was that the supply they had was the only one available. After giving the problem some thought, the city enlisted the help of the U. S. Geological Survey to study the problem on a share-the-cost basis.

The Elizabeth City filter plant and the raw water storage reservoir.

The interior of the well field pump house. In the far background are the two Ingersoll-Rand vacuum pumps. In the foreground are the centrifugal pumps that move the water to the plant.

A battery of Morris pumps bring the water for distribution throughout the city. Note the gasoline stand-by unit in the background. This gives the plant protection against an electric breakdown.

Here you can see the vacuum tanks used to draw the water from the well field. In the background is the pump house which contains the equipment used to transfer water from the field to the plant.

This study uncovered some interesting ground water characteristics. It showed that the area has a top soil varying between two and five feet in depth. Below this is a layer of sand 25 feet thick, containing salt-free water, and below this is a layer of clay 50 feet thick; and below is soil carrying water with a high chloride content. The area that the Geological Survey selected as having the best possibilities for ground water development was about three miles from the town, bordering the famous Dismal Swamp.

The plant, built in 1926, employed the rapid sand filter method. Its design utilizes four half-million gallon filters and settling basins, and two 2,100 gpm and two 1,440 gpm Morris pumps for the main pumping units. One of these larger pumps is powered by a gasoline motor; the other three are electrically driven.

Although the new source of supply was of a different character than the old river supply, it still required treatment that the old plant could furnish; for this water, although salt-free, had around 20 ppm of iron. Though this job was difficult, the character of the water remained consistent; and once the treatment had been selected, few adjustments in treatment were required.

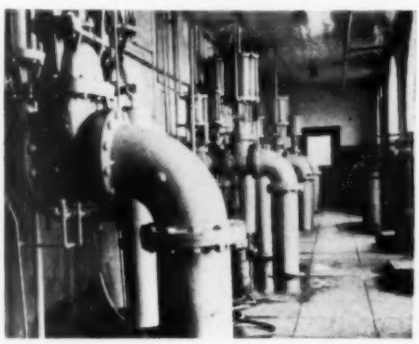
Two Pumps for 140 Wells

The plant draws water from its well field by a unique vacuum pump arrangement. The original installation called for the construction of approximately 140 6-inch wells, 30 feet deep, equipped in the last ten feet with a Johnson well screen. These wells all connect with a pair of 500-gallon steel tanks from which air is exhausted by a pair of Ingersoll-Rand vacuum pumps producing a vacuum of 26 inches of mercury.

This vacuum draws the water from the well field into the tanks where a pair of Nash centrifugal pumps transfers it to 100,000-gallon storage reservoir for transfer to the main plant. The original design contemplated pumping the water directly from the 500-gallon tanks to the plant; however, this didn't give enough operating margin in case of difficulty with the pumps.

How the War Affected the Water Supply

The well field, strategically located on as high ground as exists in the area —actually only 13 feet above sea level —drawing water to the existing two-mgd filter plant, where the iron was removed and a limited amount of softening took place, comfortably solved Elizabeth City's water problems until the clouds of war loomed over the horizon. Although not a great deal was said about it, this area was one of our forward lines of defense in our grim Battle of the Atlantic; and the shore here, like many of the shores on the Eastern seaboard, were ominously black with the oil from sunken tankers. Long before that significant December 7 of 1941, Consolidated Vultee had been operating an airplane reconditioning base close by, preparing planes for ferrying to England on a lend-lease basis; and the Coast Guard had placed an off-shore seaplane patrol base here, later reinforced by a lighter-than-air base. This resulted in the steady growth of the city from 11,000 to approximately 18,000.



The pipe gallery with its set of hydraulic valves controlling the operation of the filter

This, of course, required a bigger supply—a problem easily solved since the city now knew where adequate water was and how to get it. Water Superintendent Luther simply pulled out his map of the well field and extended one end of it along the ridge of high ground where the geological survey had indicated that good water might be found, thus making room for 110 new wells.

The next step called for a new vacuum pumping station and transfer pumps to move this water to the 100,000-gallon raw water storage reservoir, where it then goes to the plant. The new pumping station was equipped with a pair of Allis-Chalmers vacuum pumps to draw the water from the well field, and two centrifugal pumps to move it to the reservoir.

The only other additional problem was that of providing for additional raw water storage. It wasn't that the plant did not have capacity to treat the required amount of water; it was that this unique system of drawing the water from the wells, even though it was admittedly much cheaper than equipping 250 individual wells with pumps, presented problems of maintenance which were, moreover, made more difficult because of the heavy iron content in the raw water. These maintenance periods required the shutting down of the pumping end of the plant, and the storage reservoir would then have to carry the load. With close to a two-mgd demand it was apparent that the one-mgd clearwell might not provide the required margin. Actually, an occasion or two did arise when the reserve supply of water ran dangerously low.

(*Continued on page 157*)

Unique Shopping Center Proposed

Overhead parking, moving sidewalks, day nurseries, and a theater and entertainment area are planned for Flushing, N. Y.

A SHOPPING center covering approximately 25 acres of land, with overhead parking on broad covered roofs for some 5,000 cars and a sub-basement level which will eliminate from the streets of the area trucking and loading and unloading of merchandise, is proposed for Flushing, Long Island, a sub-center of Greater New York. Integrated with the shopping center, a theater and entertainment area is planned.

The site in the borough of Queens —not far from the World's Fair site of 1939—is a highly congested and poorly planned area. The structures to be removed for the new development are mostly outmoded buildings of early vintage, many of them in a bad state of disrepair. Contrasted with existing conditions, architect Lester C. Tichy and the realtor developers, Webb & Knapp, Inc., are planning an integrated architectural design whose beauty and utility will, it is believed, materially enhance the appearance of this section of the community.

In announcing the plans for this unique shopping center, on August 6, William Zeckendorf, executive vice-president of Webb & Knapp, Inc., pointed out that "a shopper coming by car may enter the parking areas at any one of the five points. As the driver goes up the ramp, she will swing around the second floor of the department store, and from here she has a choice of going to any one of five parking mats without crossing any street-level traffic. She may 'park' her child in the contemplated day nursery under the supervision of a registered nurse, visit any number of shops and restaurants, go to the entertainment area, and finally pick up her car and child at the end of a very pleasant day's shopping expedition."

While most of the buildings will be three stories in height, there will be three ten-story structures—a general office building, a professional building with private hospital on the top floors, and a hotel.

Moving Sidewalks Cooled in Summer and Heated in Winter

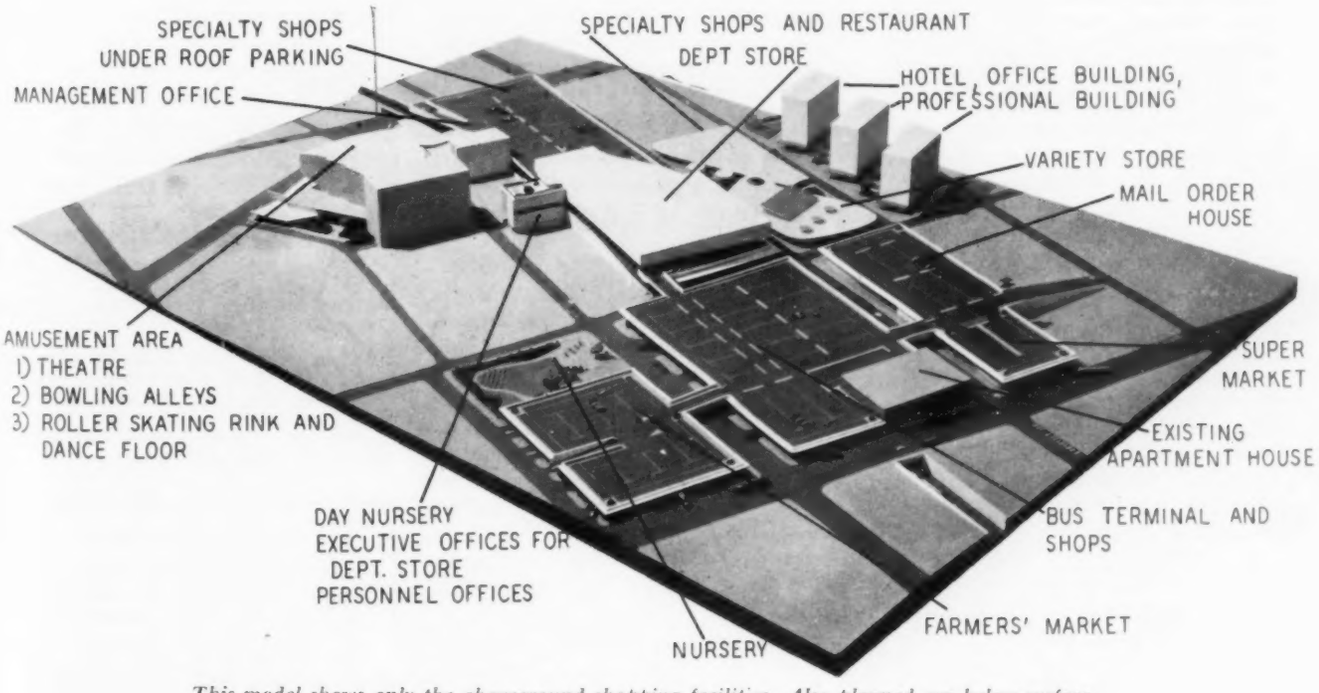
As the sidewalks either will be recessed in the structures or covered by marquees, it will be possible to send the cool air into the streets in the summertime, Mr. Zeckendorf explained. In winter, he added, warm air will be sent from the buildings into the streets.

In addition, vast below-surface-level walks, with shopping facilities to duplicate the great stores above, will be constructed under each avenue, Mr. Zeckendorf went on. These subterranean thoroughfares will have moving platforms so that a shopper in the basement stores will do little walking.

Advantages of this North Shore shopping center project to individual citizens of the borough of Queens and to the city of New York, as summarized by Architect Tichy, include:

1. Solution of a critical parking problem.
2. Increase in tax revenue.
3. Slum clearance.
4. Stabilization or increase in the assessed valuation of real estate in the area.
5. Service to shoppers living in Queens or suburban areas who may wish to avoid the congested metropolitan area in Manhattan and yet purchase within the city limits.

The cost of the project—all of it to be financed by private capital—is estimated at $50,000,000. Most of the funds are expected to be provided on mortgage by one of the large life insurance companies.



This model shows only the aboveground shopping facilities. Also planned are below-surface-level walks and shops to duplicate those above.

$10,000,000 Ten-Year Improvement Program Urged by Fort Wayne Chamber of Commerce

THE Civic Affairs Committee of the Fort Wayne, Ind., Chamber of Commerce has issued recommendations for a $10,000,000 civic improvement program to be carried out over a period of 10 years. Minimum amounts were suggested for the following projects: war memorial coliseum, $2,500,000; Nickel Plate Railroad track elevation and grade separation project, $2,500,000; new and rehabilitated sewers, $2,300,000; flood control, $1,500,000; street rehabilitation, $450,000; public schools, $332,000; parks and recreational improvements, $200,000; delinquent boys' home, $40,000; 4-H Club housing, $10,000, and traffic survey, $10,000.

Other civic projects, estimated to run into many additional millions of dollars, include expansion of the city's municipal airports, creation of a civic center, improvement and landscaping of the banks of the three rivers running through the city, and additional automobile parking facilities. Financing plans have yet to be evolved.

Fort Wayne's Mayor, Harry W. Baals, addressing the annual conference of the Indiana Municipal League at Indianapolis, July 25, urged the appointment of a commission by the governor to work out new state legislation to the end that local government may finance urgently needed public improvements.

The mayor said that civic improvement plans cannot be carried out and financed in many communities without unduly increasing the local property tax rate, and that bonds cannot be extensively issued because of the present 2% limitation. He urged the need for new revenue sources to provide such civic improvements as war memorials, playgrounds, swimming pools, and grade separations, which various civic organizations in addition to the Chamber are currently stressing as necessary and urgent.

The Fort Wayne Taxpayers Association has proposed the extension of the city's limits to embrace new industrial districts as one method of raising additional tax revenue without the necessity of materially increasing the present property tax rate of $2.60. This rate would have to be upped to $3.17 to finance the currently proposed $10,000,000 improvement program over a 10-year period, or $2.90 over a 20-year period.

The Nickel Plate Railroad, exclusive of the city's proposed track elevation program, has announced plans to construct a new passenger station, division office, and freight house whenever the city's proposed improvement program is approved.

Recognizing the fact that any extensive program of public improvements ought to be related to a well-considered city plan, the Fort Wayne Civic Association, through its president, John R. Worthman, has appointed a Master Plan Committee. The chairman is architect A. M. Straus.

Support Your Community Chest!

THE weeks just ahead will witness in many cities the annual fund-raising campaign of the local Community Chest.

During the war years, when Community Chests were also War Chests, goals were generally oversubscribed. This year most or all of the wartime appeals will be lacking from Community Chest budgets. But deferred capital and replacement expenditures of many local welfare agencies must be reckoned with. The urgent demand for such funds will offset in part the normal reduction in expenditures from a wartime to a peacetime basis.

All of which points to an impelling need for all the aid that mayors and other city officials can give in the impending Community Chest drives. If the relief and preventive activities of private agencies are curtailed for lack of funds, public expenditures may have to come to the rescue or local health and welfare standards may suffer seriously.

The challenge, therefore, has both a humanitarian and a tax-saving appeal. Your help may make the difference between success and failure in attaining the Community Chest goal in your community.

New York Municipalities Plan Memorials

A COMPILATION of the latest available information on the erection of war memorials in the cities of New York State has been prepared by the New York State Bureau of Municipal Information.*

Although not quite a year has elapsed since the end of the war, 14 cities out of a total of 29 that replied to the Bureau of Municipal Information's questionnaire are planning war memorials. All of these will be "living memorials," and will take the form of parks, playgrounds, athletic centers, auditoriums, or community centers. Sixty-three villages responded to the questionnaire, and of these 6 first class villages have decided to build war memorials, as have 5 second-class villages, and 4 third-class villages.† Two of the villages are planning to build libraries, a few are planning athletic facilities, and one village is merely mounting two 57 MM cannon donated by the federal government. No monuments or statues are reported being planned by any of the reporting communities.

The estimated cost of the memorials planned by the cities and villages ranges from $2,800 for a clock in the park of the third-class village of Cobleskill to $2,500,000 for a civic auditorium, containing exhibit space, meeting rooms, assembly halls, and a sports areas for the city of Rochester. Among the more expensive projects are also included a 2-million-dollar memorial building for New York City's Borough of Brooklyn and a 1-1½-million-dollar municipal auditorium for Niagara Falls.

Among the municipalities who were prepared to answer questions on the financing, 9 are planning memorials which will be financed solely by the municipality, 7 will be financed entirely by private funds and contributions, and 5 will be paid for by a combination of the two.

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* Although additional copies of this report are not available for distribution, THE AMERICAN CITY will gladly furnish further information as to specific cities.

† There are a total of 62 cities in New York State. Other incorporated municipalities holding membership in the Conference of Mayors and Other Municipal Officials include 56 first-class villages, 48 second-class villages, and 41 third-class villages.

Living Memorials

"Commemoration through Community Services," a handsome brochure on living memorials, is available from THE AMERICAN CITY, 470 Fourth Ave., New York City, for $1.00. Special price for quantity orders.

The Nation's Only Municipal Milk Plant

Tarboro, N. C., operates a milk-processing plant as a public health measure

By DONNA L. HUGHES

THE days when buying milk was a matter of having it ladled from buckets on a horse-drawn cart into the pitchers of waiting housewives are not long past in Tarboro, N. C. (population 7,148), but the rapid improvement in milk handling there in recent years has given it the distinction of being the only community in the United States to own and operate a milk plant.

In 1918 the prevalence of dysentery and outbreaks of typhoid fever in Tarboro were traced to the milk supply. Efforts to improve production conditions on the farms were unsuccessful, and the producer-distributors who furnished Tarboro with its milk supply were unwilling to undertake pasteurization. In order to secure a sanitary milk supply, the town found it necessary to start its own milk-processing and distributing system.

PHOTO BY C. S. KILLEBREW

In this yellow brick building all the operations of the Tarboro Municipal Milk Plant from receiving through pasteurizing, bottling, and distributing are performed. The plant processes 500 gallons of Grade A sweet milk daily.

Equipment Originally Housed in Municipal Water Plant

Beginning modestly with equipment housed in the municipal water plant, the milk plant expanded with the increasing demand for its products. In 1921 new milk-processing equipment was purchased and housed in a steel building used mainly as an electrical supply depot. In 1930 a new and separate plant, completely furnished with up-to-date equipment, was constructed. Today the plant is waiting to receive much new equipment, including a bottle washer, a vat, and a filler.

The Tarboro plant includes not only the machinery for receiving, pasteurizing, bottling, and bottle washing, but also a cream separator and ripener, chocolate-mixing tanks, a butter churn, and a butter printer. The plant has four employes in the processing department, four truck drivers, two office workers, and a manager, David Lee, who is also in charge of Tarboro water purification.

Plant Products

The plant's largest output is Grade A pasteurized sweet milk, of which 500 gallons are processed daily. Part of the Grade A milk which the plant purchases from eight producers in the area is turned, after pasteurization, into lactic acid buttermilk and chocolate milk, the daily outputs of which are 100 and 150 gallons, respectively. Both heavy and light cream are sold when available. Butter production has dropped considerably, from a former 600 lbs. per week output to the current 100 lbs.

The entire responsibility for operating the plant is charged to Manager David Lee. All matters of policy, including price determination, however, are assigned to the 7 elected city commissioners, one of whom is designated as milk commissioner and given special jurisdiction. The milk commissioner, M. S. Brown, acts chiefly as a negotiator between the plant management and the city hall and receives detailed reports monthly. Most of the problems of the milk plant are settled cooperatively by Mr. Brown and Mr. Lee.

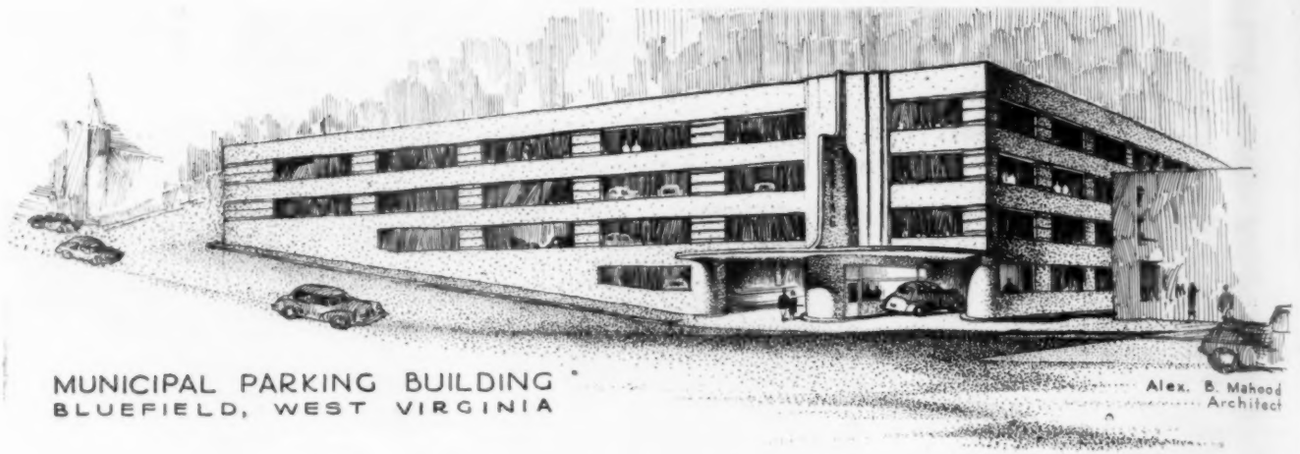
In addition to the beneficial effect the establishment of a municipal milk plant has had upon community health through increased consumption and lower prices, the Tarboro plant is performing another service in trying to interest farmers in the surrounding territory in milk production. If, through the efforts of the plant and the county agents, tobacco farmers can be influfluenced to keep a few dairy cows, the Tarboro plant will enlarge its route to take in additional suppliers.

British Chancellor of the Exchequer Discusses Taxation of Land Values

ON THE "Parliamentary News" page of its June 1946 issue, the *Municipal Review*, official organ of the British Association of Municipal Corporations, reports a statement in the House of Commons on May 16, by the Chancellor of the Exchequer, Hugh Dalton, on the taxation of land values.

Reading that the staff of the Inland Revenue Department were too hard-pressed to inaugurate a national tax on land values at this time, Chancellor Dalton is reported as saying that, "On the other hand, if there were local authorities who had the staffs, and if they could do it—and many local authorities in the past have passed resolutions in favor of having it—that was a different proposition."

The chancellor also indicated that "consideration would be given by the Government, between now and next year, to the possibility of such a tax on land values, particularly in relation to the adjustment that must take place between national and local finances and the revision of the block grant to which the Government were committed."



Municipality Finances Parking Building

BLUEFIELD, W. Va., by selling $450,000 of revenue bonds for the construction of an automobile parking building project, is pioneering in the solution of the parking problem vexing so many congested city areas.

Bluefield, located high in the Mercer County mountains near coal mining territory, has narrow streets and a very compact business district, with no vacant lots for parking purposes, according to E. P. Mitchell, city manager. Although its 1940 population was only 20,641, the city's wholesale houses, metropolitan shops, and department stores serve an estimated 300,000 persons living within the 50-mile trading radius.

Efforts were made to have private interests erect a parking building, but, after 15 years of discussions and negotiations, nothing had been done. Two years ago, with the decided cooperation of Bluefield citizens, it was agreed to make the parking building a major municipal post-war project. With this in mind, the city acquired a tract of land in the business district consisting of 46,600 square feet at a cost of $114,000.

Proposed Parking Building

The proposed building, designed by a local architect (see illustration) will be open-sided, covering the entire lot, and will have four parking floors with a total capacity of 800 cars. The concrete roof will be the fourth parking floor, and only cement, crushed stone, sand, and reinforcing steel, besides form lumber, will be used in building the main structure. It is expected that a space on the first floor will be leased to an oil company to furnish gas, oil, greasing, washing, and accessory service to patrons of the building.

The 30-year serial bonds to cover the building's construction costs are strictly revenue bonds with an average interest rate of 2.6%. The maximum debt requirement in any year during the life of the issue amounts to $25,525 and occurs in the year 1953. The average, over the life of the issue, amounts to $22,871.42. Estimated annual income after operating costs amounts to $47,910 and represents a coverage of 2.1 to 1 on an estimate based on only 46.19% capacity.

The investment firm of Scott, Horner and Mason, Inc. of Lynchburg, Va. is serving as bond broker, and Wood, Hoffman, King and Dawson, attorneys, of New York have approved the issue's legality.

Forty Million Dollar Bond Issue Voted for Atlanta and Fulton County Improvement

CITIZENS of Atlanta and Fulton County, Ga., approved on August 14, by a five-to-one vote, of a $40,400,000 joint bond issue, largest in the community's history, designed to provide capital improvements which the area has needed for more than 25 years.

In addition, Fulton County residents living outside the Atlanta city limits have approved a special issue of $2,500,000 in school bonds.

The joint bond issue was the result of more than a year's study by a special committee of citizens appointed by the heads of the city and county governments. The committee was told to prepare as large a bond issue as the tax laws would permit, and it was left to its own devices to decide specific projects to be recommended to the two governments and later to the people.

Wide Range of Improvements Financed

A major item of the joint issue is highway developments to solve the metropolitan Atlanta traffic problem, which has become acute since the end of the war. The basis for solution is the $60,000,000 H. W. Lochner Highway and Transportation Plan. Although the plan, prepared by a Chicago engineering firm, is the area's ideal, there are not sufficient local or federal funds in sight to carry it out. After all other necessary improvements had been included, there remained only a total of $16,600,000 of the bond issue for highways. Of this total $12,500,000 was included in the county issue, while the remainder is to come from city funds. Both governments hope that federal and state funds will be available to finance at least a major part of the Lochner plan or an acceptable substitute.

Principal items in the $20,400,000 city bond issue is an allocation of $9,000,000 for schools and $3,000,000 for improvements to the municipal airport with the expectation that federal airport funds will be available to match that sum dollar for dollar.

An extensive building program will begin as the city also voted $1,700,000 for a new main library building and three branch libraries; sewer funds, $1,000,000; extension of the city auditorium, $600,000; city parks, $500,000; construction of a fire department headquarters and signal station, $300,000; and a new municipal garage, $200,000.

In addition to airport and highway funds, the Fulton County bond issue included $2,500,000 for a new courthouse annex; $2,000,000 for sewers; $1,000,000 for parks; $500,000 for health and community centers; $250,000 for a fire and police station; and $250,000 for two new incinerators.

Both sets of bonds will bear 1.5% interest and mature in 30 years.

Little Rock, Ark., Extends Water Distribution System

New mains reinforcing primary and secondary feeders help this city catch up with construction postponed by the war

By L. A. JACKSON
Manager-Engineer
Municipal Water Works
Little Rock, Ark.

THE present extension of the water distribution system in Little Rock constitutes the first important project to reinforce our distribution system in 30 years. This in spite of the fact that in June, 1916, the first year that records were kept, Little Rock was serving 7,948 consumers; at the end of March, 1946, 21,890—an increase of 176% in the 30-year period.

The city acquired the plant and distribution system in 1936, and during the past 10-year period has seen the number of consumers increase 34% and water production jump 70%. During this period, water rates to minimum consumers have been reduced 25%, and the sum of all rate reductions represent a saving to all classes of consumers of $150,000 per year.

The distribution system obviously has not kept pace with the growing demands put on it, partly because of regulations restricting construction during the war. As a result, Little Rock is suffering from growing pains. In order to catch up with increased consumption, we began last year a comprehensive long-range plan of distribution on which we have based our present construction program.

In 1945 the department completed $100,000 worth of water-main installation, improving pressure and flow conditions in the southwest and Pulaski Heights sections of the city. These improvements will be extended further as soon as materials become available.

At intervals the water supply facilities are inspected and graded by engineers of the Fire Prevention Bureau. Inspections revealed that our system is far below standard, especially in the number of hydrants and the fire-flow characteristics. Installation of water lines, however, as proposed in this present project, will bring fire flows and distribution facilities, particularly in the mercantile and industrial areas, up to standard. The east end of the city shows promise of developing into an industrial area requiring increased consumption demands and fire-flow requirements. Consequently we are extending a 20-in. primary feeder across town to improve fire-flow service there.

THE COST OF PIPE, THEN AND NOW
Of passing interest is the rise in material costs during the 31-year period 1914-1945.

Pipe Size	*1914 cost per foot*	*1945 cost per foot*
24 in.	$2.59	$6.20
20 in.	1.99	4.64
16 in.	1.45	3.31

The Board of Water Commissioners, anticipating material scarcities and increased prices, purchased in 1945 all the materials required in our construction schedule for this year. As a result, $25,000 has already been saved by the city. This year's actual construction will include the installation of the following:

11,058 ft. of 24-in. pipe
4,793 ft. of 20-in. pipe
3,594 ft. of 16-in. pipe
42,000 ft. of 12-in. pipe
20,000 ft. of 8-in. pipe
10,000 ft. of 6-in. pipe
125 fire hydrants

With the completion of this major improvement project, calculations indicate that service, fire flow, and pressure conditions will be improved to the point that will qualify the water system for a Class Two rating when next graded by engineers of the Fire Underwriters. Since the water system is now in Class Three, these improvements will make it easier for the city to improve its rating, which will ultimately result in substantial savings in insurance premiums paid by the people of Little Rock.

An ample supply of gate valves gives good control over the new distribution system.

A Northwest trench-hoe easing a section of 24-in. pipe into place.

Cooperation to Keep State Pawnshop Files Complete Urged

THE IMPORTANCE of local cooperation in keeping state pawnshop files complete was stressed by George H. Brereton, Chief of the California State Bureau of Criminal Identification and Investigation, at a recent meeting of the Los Angeles County Peace Officers' Association. According to the July issue of *The Journal of Lamda Alpha Epsilon,* Chief Brereton pointed out that every community benefits from the state file when property comes under its scrutiny because of the centralization of records.

Louisville Mediation Board for Labor Disputes

LOUISVILLE, Ky., recently acted to improve labor-management relations by creating an 18-member mediation board, the International City Managers' Association reports.

The board is patterned after the Toledo, Ohio, industrial relations committee set up several months ago and is composed of six representatives each from labor and management and six representatives of the general public. All members are appointed by the mayor. When two factions in a labor dispute are deadlocked they may submit their case to a three-member subcommittee of the new board.

Making Streets Winter-Safe in Two Northern Cities

Holland, Mich., uses inexpensive local sand and increases the proportion of calcium chloride. St. Paul prefers hand shovelers to machine for spreading abrasives.

Calcium chloride treated abrasives reduce the danger to traffic during icy weather in Holland, Mich.

TWO CITIES in the northern snow belt review their practices in combating icy streets in winter, according to a recent release of the Calcium Chloride Association. One, Holland, Mich., has a population of only 15,000 with 37 miles of paved streets and 30 of dirt. The streets are level and consequently require abrasives only at heavily travelled intersections and railroad crossings. The other, St. Paul, Minn., must apply abrasives to more streets than Holland has paved.

To obtain skid-free streets, City Engineer Jacob Zuidema of Holland uses a fine white sand available locally at low cost and mixes it with 200 lbs. of calcium chloride to the yard, approximately double the customary amount. The use of a coarser sand, he feels, would allow him to lower the calcium chloride content to the usual 100-lb. per cu. yd. In balancing costs, however, Engineer Zuidema is of the opinion that the larger amount of calcium chloride plus the inexpensive sand is the more economical combination.

The sand is spread with a spinner type of sander and can cover the danger points during an ice or snow storm in a relatively few hours.

St. Paul uses the more common blend of 100 lbs. of calcium chloride to a yard of abrasive, whether it is sand or cinders. The city uses eighteen 1½-ton trucks for normal ice conditions but can raise this number to thirty if the situation requires it. Because of the varying requirements of skid protection, it is the practice to spread the abrasives by hand rather than by machine. Public Works Commissioner Milton Rosen states that he has tried several mechanical spreaders but preferred the hand-type of work for St. Paul conditions. He states that he is still looking for a mechanical spreader and will consider the purchase of one that will work satisfactorily in accordance with his specifications.

St. Paul spreads an average of 7,000 cu. yds. of cinders per year, obtaining them from local public utilities and crushing them to a size that will pass through a half-inch screen. The city has 1,181 miles of streets and alleys, of which 259 are paved, 399 are oiled, and 523 are unimproved. The streets receive full-length skid protection on 74 miles of main thoroughfares; this protection is applied to the rest only where it is needed.

Jersey City to Be Replanned

THE Planning Board of Jersey City, N. J., has engaged the firm of Churchill-Fulmer Associates of New York to prepare a preliminary survey of that city.

The survey, which will require six to eight months for completion, will include recommendations for the location of industry, general land use, and possible steps toward the physical improvement of the city. It will also include the related phases of the city plan, such as traffic and transportation, improvement of business, residential and recreation facilities, and the study of problems involving the railroad and harbor uses.

St. Louis Voters Approve Municipal Income Tax and Anti-Discrimination Charter Amendment

A NEW municipal income tax and an anti-discrimination amendment to the city charter were both approved by St. Louis voters at the primary election on August 6.

The income tax legislation provides for a levy of .25% on the gross earnings of individuals and the net profits of business. Expected to raise $4,000,000 annually to pay increased city salaries and other expenses, the tax will apply to the salaries, wages, and commissions of all residents wherever earned, and to that portion of the earnings of non-residents and profits of business acquired in the city.

Prohibiting discrimination against city employes, the city charter amendment reads as follows:

"No person shall be appointed to a position in the classified service hereunder, nor be demoted, reemployed, promoted, removed, increased or reduced in compensation, nor in any other way be favored or discriminated against in any matter within the purview of this article, because of his race, political or religious opinions, affiliations, or service."

Emergency Orders Mean Additional Expense

THE UNCONTROLLED use of emergency orders is one of the chief causes of breakdown in a central purchasing plan for municipalities, a recent bulletin of the Tax Foundation reports. If departmental heads fail to anticipate their requirements, situations may arise which require the immediate shipment of goods without obtaining competitive bids. These emergency orders are often placed by the departmental heads at top retail prices instead of being handled by the purchasing agent at competitive prices. If such orders are frequent, the cause should be examined.

Massachusetts Outdoor Advertising Authority

AN OUTDOOR Advertising Authority created by the Massachusetts legislature will become effective this month. It will adopt rules and regulations that have been in effect for a number of years under the administration of the Massachusetts State Department of Public Works, including such requirements as the forbidding of advertising displays within public view of public parks. According to a recent issue of *Printers' Ink*, the authority is the first of its kind.

Sayreville's War Memorial Park

Forty-acre tract, acquired in 1943, will undergo ten-year development program.

By JOSEPH T. KARCHER
Borough Attorney, Sayreville, N. J.

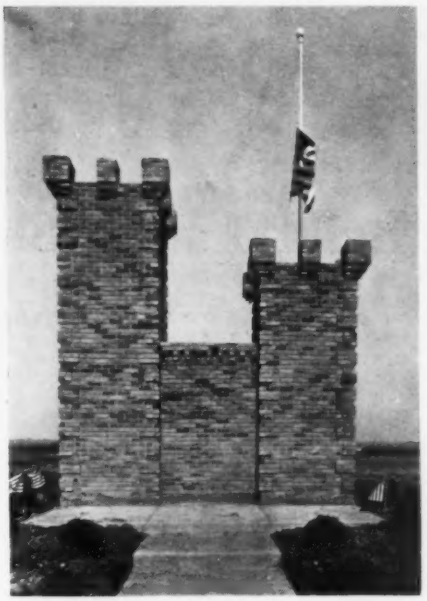
SAYREVILLE is an industrial community of some 8,300 residents located on the south bank of the Raritan River, in Middlesex County, New Jersey, about midway between Perth Amboy and New Brunswick. It is the home of manufacturing plants of such nationally known companies as DuPont, Hercules Powder, and National Lead.

Adjacent to Sayreville's old Borough Hall and World War I Monument is located a 40-acre triangular tract owned by the Sayre & Fisher Brick Co., which in 1943 was being reorganized under Sec. 77B. The mayor and council worked out a tax settlement by which the borough acquired this tract for park acreage, in return for a credit of $25,000 on the *accrued interest only* on the industry's tax delinquency. The principal of the tax was paid in full, plus about $18,000 additional interest. Today the frontage on the three streets alone would bring much more than the price paid for the whole tract.

Within a short time (early in 1944) Councilman Anthony Popowski, chairman of the Public Buildings and Grounds Committee of Sayreville, sponsored a resolution naming the tract "War Memorial Park" and dedicating it "as a tribute to the living and dead who served their country in World Wars I and II." Thus Sayreville became one of the first communities in the country to establish a memorial to its veterans of this war.

Many Needs to Be Met

The park was an excellent investment from a purely business standpoint. A new municipal building just erected, was cramped for land. With the acquisition of the 40 acres there is now room for an extra wing or two whenever needed. The municipal garage, long since inadequate, can now be supplemented with a new one adjacent to the old one, which can still be used. The municipal parking lot has been enlarged and improved and can now serve not only the borough but also parishioners of the Presbyterian Church, which is opposite the garage. Indeed, the park land will furnish the municipality with all of the land that it needs, it is estimated, for the next hundred years at least. Included will be many things Sayreville never had before, and which every progressive and enlightened community needs.



One of the first World War II memorial monuments, set against the background of a 40-acre park, commemorates those who served in this war and the last.

To begin with, the borough was able to build a duplicate of its World War I monument on the opposite side of the new Borough Hall in honor of veterans of World War II. A plaza or mall with an appropriate monument for its volunteer firemen is planned. Three public parking lots, each of which will accommodate 100 cars or more, are on the schedule. Three separate playgrounds at widely separated points in the park will furnish facilities for various abutting neighborhoods. The same is true of two tennis courts and two soft ball diamonds.

Work Already Done

It is estimated that it will take at least ten years to turn this tract into a finished park. Meanwhile, much work has already been done in converting this rough uncultivated terrain into a useful and beneficial adjunct of community life.

For example, the local high school has had a football team of which the community was very proud and which needed a field of its own. So the borough fathers set to work with a will and the first fall following the acquisition of the park found a newly constructed gridiron. Simultaneously a quarter-mile cinder track was built around the gridiron, and recently bleachers have been added.

A brook flows through the park. It was planned to excavate an appropri-

ate area in the course of this brook and create a wading pool in the summer, and a hockey rink in the winter. Once again the local officials showed their ingenuity and economy. It was found that the earth excavated to make the pool was good top soil which could be used to surface sections around the monuments for seeding.

This year at least a dozen local softball teams have been organized—and an elaborate inter-borough baseball league organized. One of the softball fields has been filled, graded, and prepared for use. Many of the players are veterans of World War II.

There is no denying that much more work must be done on the park. It will take time, effort and expense, but who can say it is not worth it? Numerous paths will wind gracefully through its broad acres. These will serve as outlines for the various facilities already described. In addition at least half a dozen additional picnic grounds, barbecue fields, a mall and bandstand for summer open-air concerts and similar events will be built.

The paths are to be given a semi-permanent surface of tar and cracked stone. Then the Shade Tree Commission will plant trees along their courses. Where the paths intersect, provision is made for flower beds, evergreens, and occasional fountains. Benches will some day line these paths "for talking age and whispering lovers made."

Not only has the Borough of Sayreville scored in being one of the very first to dedicate a park to its veterans of World War II and to those who gave their lives in the struggle, but it believes it has shown wise judgment in the selection of this type of tribute. Generation after generation will utilize the manifold advantages of Sayreville's War Memorial Park.

Must We Build Future Slums Now?

For a coordinated attack on problems of urban planning and reconstruction

By LOUIS JUSTEMENT
Director, Middle Atlantic District
American Institute of Architects
Washington, D. C.

MOST of the housing produced in the next year will consist of poorly planned communities of jerry-built houses which will relieve current housing shortages but, at the same time, accentuate the planning problems confronting the average American city. We shall be building the slums of tomorrow before we have solved the problem presented by the slums of yesterday. Nothing much can be done about this situation now, because housing—any kind of housing—is critically needed and we cannot delay its production by taking the time that would be required for a good planning job.

We should begin now, however, to plan for the time when we shall no longer be forced to rely on temporary expedients and when we shall be able to begin the orderly rebuilding of our cities that will be required to make effective use of our technical and material resources.

In order to develop a program of action that incorporates the considered judgment of the members of the planning professions, the American Institute of Architects, through its Committee on Urban Planning, is inviting the cooperation of several other national organizations interested in urban planning and reconstruction. The committee has no program of its own for which it is seeking support but hopes that a national conference on planning will be able to develop a program that will truly reflect the desires of all the cooperating professions. As a point of departure, however, the committee suggests that these professions should be able to agree on the following broad statement of facts and principles:

Economic planning is at present in ill-repute among most Americans. Even the physical planning of our cities is frequently resisted because of the economic and social planning which it inevitably involves. The end of the war has brought with it an increasingly strong desire on the part of business to be free of all controls. We are living in a period of industrial strife, economic uncertainty, and political vacillation; atomic warfare portends an ominous future, threatening the complete destruction of our civilization. Under these circumstances a broad long-range program for urban planning does not seem to be an urgent *political* necessity; it may even seem to border on futility.

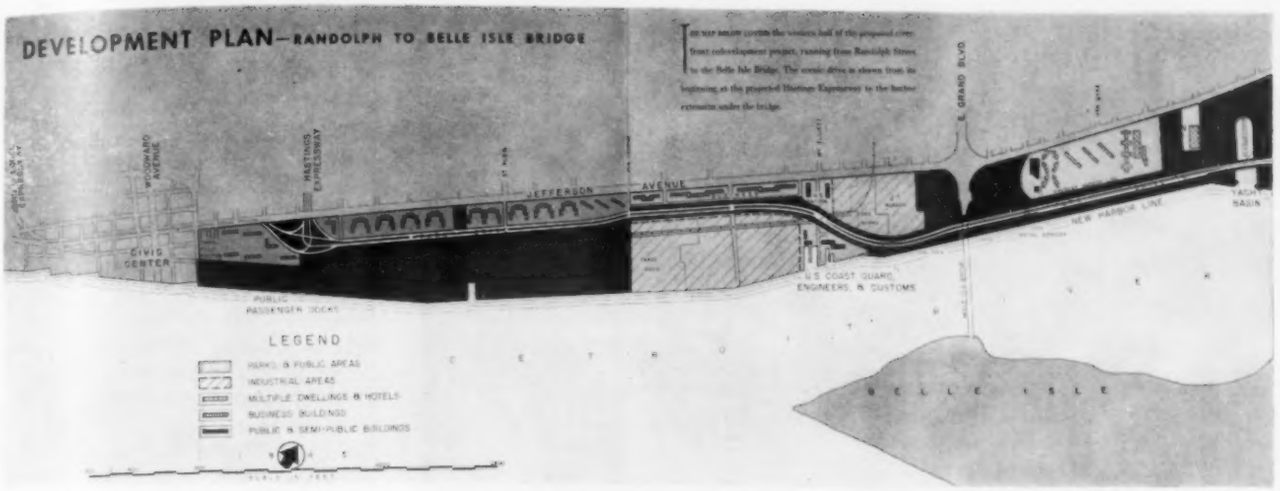
To Lessen the Need for Irksome Controls

The very fact that we are not confronted with the necessity for immediate action, however, makes the present time propitious for developing a satisfactory *plan* of action. For, if we are to avoid the necessity for irritating restrictions, it will be well to remember that they are not all devised by a bureaucracy intent on making life miserable for us. Many of the controls we deplore result from planlessness: we wait until an emergency forces us to devise hasty and poorly conceived remedies that are frequently cumbersome and ineffective.

The chief aim of this committee representing the planning professions will be to prevent such a situation with respect to the field of urban planning. We shall try to devise a program for rebuilding America on the basis of the minimum controls consistent with the goal we set ourselves. Let us always remember that we do not avoid the necessity for restrictions by mere resistance; we can, however, avoid both the extent of regulations and the irritations they cause if we are prepared to exercise forethought.

In most cases we shall find that good planning is required to *preserve* the maximum amount of freedom for all concerned, that lack of planning usually results in restraints that we accept merely because they are the result of chance. Our closely integrated civilization has grown too complex to rely entirely on chance, however, without courting the risk of disaster. Its very complexity, on the other hand, has increased the danger due to tinkering with economic processes. The committee now being organized can be most useful in suggesting a procedure for urban redevelopment which is based on a careful evaluation of the requirements of business as well as those of the public welfare.

Representing the A. I. A. Committee on Urban Planning at a meeting on August 5 in Washington, D. C., at which these preliminary plans were formulated, were the author of this article as chairman, and four of the vice-chairmen — Robert E. Alexander of Los Angeles, Robert F. Smith of Miami, Jerrold Loebl of Chicago, and Henry S. Churchill of New York. G. Holmes Perkins of Boston was unable to attend because he was in England, where he is temporarily serving as consultant to the Ministry of Town and Country Planning on problems of replanning the blitzed areas.



Western half of the proposed Detroit riverfront redevelopment project. Below is the continuation of the plan to the city limit.

Along the Waterfronts

Part II—Resort and Lakefront Plans

DETROIT'S City Plan Commission, with the help of the Department of Parks and Recreation and other city agencies, has completed a comprehensive plan for the redevelopment of the easternmost 6 miles of the riverfront that proposes the utilization of more than ⅔ of the water frontage for recreational purposes. The development of four major recreation areas, linked by a parkway through which runs a riverfront drive, are included in the plan. Industrial and commercial establishments, now scattered, will be concentrated in two districts.

The entire area totals 1,182 acres, of which 729 have been earmarked for recreation and parkway, 333 for industry, 86 for residences (mainly multiple), and 22 for institutions. There are 439 acres now in public ownership.

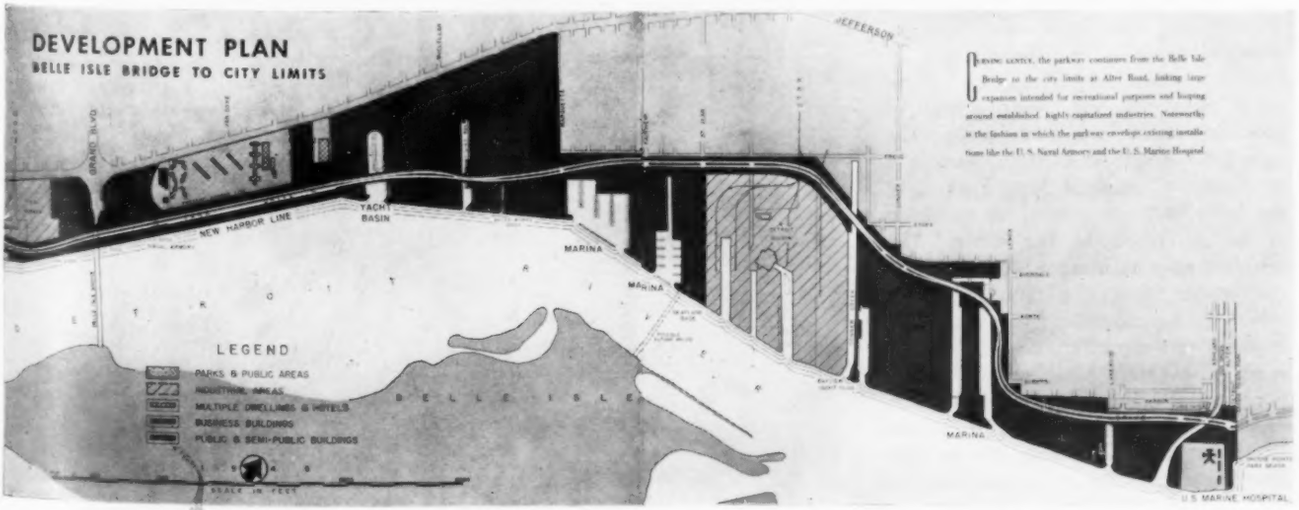
While the commission recommends that purchases of land containing useful buildings be postponed, it is urging the designation of these areas as mapped improvements. This step, under state legislation, will permit the city to control the issuance of building permits so that the growth of major developments, which would make the land expensive to acquire, may be avoided. The commission also recommends the use of the zoning ordinances to restrict the use of riverfront sites to industries which actually require this frontage.

The program, estimated to cost around $28,000,000, is now being studied by the Common Council and the citizens of Detroit.

It is proposed to effectuate the plan in three stages. The first step includes purchase of 154 acres of vacant land, construction of the westerly half of the drive—1¼ miles of it on made land to be reclaimed by extending the harbor line 400 feet—and improvement of 80 acres of urgently-needed recreation areas. Of the 80 acres, the city owns 45 acres in one piece and 6 in another. Funds have been appropriated for their improvement, and development plans are already finished.

Construction of the drive will be undertaken before all the existing riverfront establishments are acquired, leaving them to be served by rail, truck, and water until they are purchased for park use. The cost of the first stage is estimated at $13,838,000.

Detroit's other major riverfront project is a group of civic center buildings. A 47½-acre site at the foot of Woodward avenue has been approved by the Common Council, as a complete site-plan. The site for a veterans' memorial administration building has already been acquired. Two million dollars have been appropriated for con-



A scenic drive linking recreation areas will run the whole length of Detroit's riverfront.

A swimming pool and many other recreation facilities have been planned for this Portland, Me., development. Methods of financing it are now under study.

struction and land acquisition. Plans are now being drawn by Harley, Ellington ,and Day, and building operations will probably begin this year. Condemnation proceedings have been authorized in order to secure a site for a city-county office building, also a part of the civic center group.

Since the end of the war, the city has completed as part of its long-range plan about half a mile of freeway construction along the shore and has landscaped the area between the completed freeway and the railroads with hundreds of trees. Included in a series of bonds overwhelmingly passed by the voters in May were items totalling $2,500,000 for lakefront improvements. An additional $1,500,000 of federal matching funds is anticipated for the work, making a total of $4,000,000 for the 6-year period.

Plans and Studies in the New England Resort Area

A striking shorefront recreation development has been planned and accepted unanimously by the city council of Portland, Me., and methods of financing it are now under study. Designed by F. Ellwood Allen, park and recreation planner of New York City, the plan calls for a land fill resulting in an extension of the shore. The problem of a railroad which separates the shore from the city would be solved by a pedestrian approach which crosses over the tracks. There is a swimming pool with bleachers and bath houses, and a building containing dining room, cafeteria, and a social activity center for dancing, movies, etc. Bowling and roller skating are housed in another building. Finally, of course, there is a yacht basin and ocean bathing beach. Circulation through the area is by means of overhead walks with ramps and the project is tied in with the circulation and parking plan of the entire park property along the shore of Casco Bay. The total estimated cost is $1,295,000. Total costs of operation are estimated at $98,810 a year, while annual intake is estimated by the planner at $103,000. Pollution of the harbor which became a problem during the war should be corrected.

The New Hampshire State Planning and Development Commission has drawn up a comprehensive plan for the development of the Great Bay region of that state to be considered by the state legislature in 1947, after consideration by the communities affected. The creation of a Great Bay Authority is recommended to carry out the plan. Every neighborhood is to have access to the waterfront, and for this purpose the plan calls for the creation of five neighborhood waterfront parks and playgrounds beside the large area of sandy beach at the Newington shore to be made into a state public beach. The size and type of the neighborhood sites is to be determined when the subdivision of the land is planned and the costs will be borne by the subdivisions. Small supervised swimming areas with dressing facilities, sports areas, and appropriate landscaping will be needed. Four shoreline shelters with picnic and playgrounds are recommended, the sites to be acquired and developed by the towns in which the facilities are located. According to Dr. Thorsten V. Kalijarvi, executive director of the commission, these four developments should precede any development of the area to provide public access to the bay and public boat docks to stimulate yachting and boating activities. Pollution abatement estimated to cost the towns involved a total of $2,375,785 is recommended. The total cost of the development planned would be according to tentative estimates, $4,919,284, which would be divided about equally by the communities involved, and the state and federal governments.

Another important New England study which will lead to the formulation of recreational waterfront proposals is the recreation survey now getting under way under the auspices of the New England Council. The pilot study is being conducted in Camden, Me., a famous seashore resort.

A small boat harbor on Chicago's Lincoln Parkway Extension. Bonds have been authorized for the extension of this improvement.

Baltimore's Municipal Piers Need Modernizing

Baltimore, Md., has done extensive port planning, largely in the commercial field. The four principal ocean terminals of this port are owned and operated by the railroads, and though they are modern and in good condition, they are now being reviewed with the cooperation of the Baltimore Association of Commerce. "The municipal piers, which are not used for major ocean shipping, are all located in the upper harbor, are in need of attention, and this has been looked into rather intensively by our committee and by the Mayor's Harbor Advisory Board," according to G. H. Pouder, executive vice-president of the organization. The primary objective is the renovation of the Light Street pier area, for which the city council has authorized a vote in November of an old $1,500,000 harbor loan, though the nature of the improvements to be made has not been settled. The area is being studied as a separate project and in connection with the city's general plan for local and through traffic improvement. The recommended plan, which would be self-liquidating, calls for present shipping as well as new shipping in the inner harbor, opportunity for additional waterfront warehousing, and considerable public parking space. Under the $50,000,000 port development act passed by the Maryland legislature some 25 years ago, the Port Development Commission of Baltimore supervises the expenditure of municipal funds for new port facilities financed by bond issues. Of this sum $10,000,000 has been expended in the intervening years and a second $10,000,000 has been authorized by the voters, but bonds have never been issued. Under this act expenditures cannot be made until advance leases are made sufficient to pay interest and retire the bonds on pier facilities constructed.

Drawing of an aquarium and marine laboratory designed for Dade County, Fla., by Marion I. Manley. The county proposes to finance it, for it is expected to pay for itself through admission fees. Its location is shown on the map below.

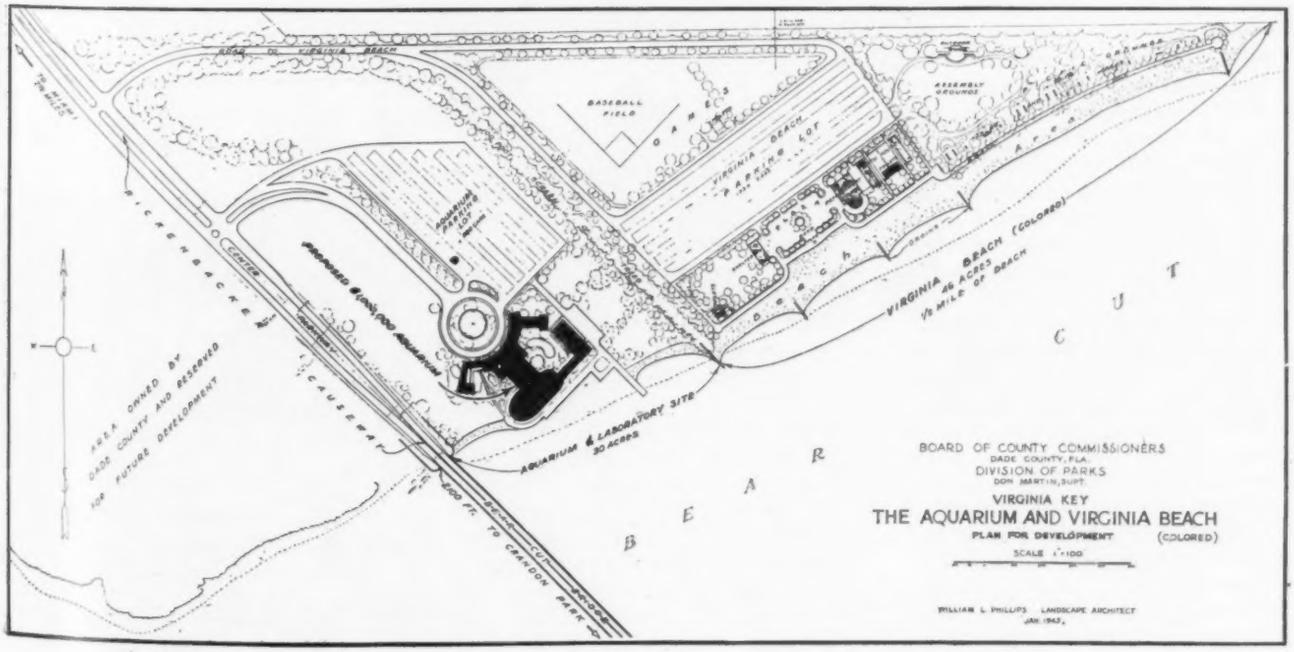
Lakefront Plans

Carrying out of Cleveland's Official Lakefront Development Plan, which was adopted in 1942, was halted largely by the war, but six permeable jetties were built to test their ability to resist shore erosion, which is one of Cleveland's most acute problems.

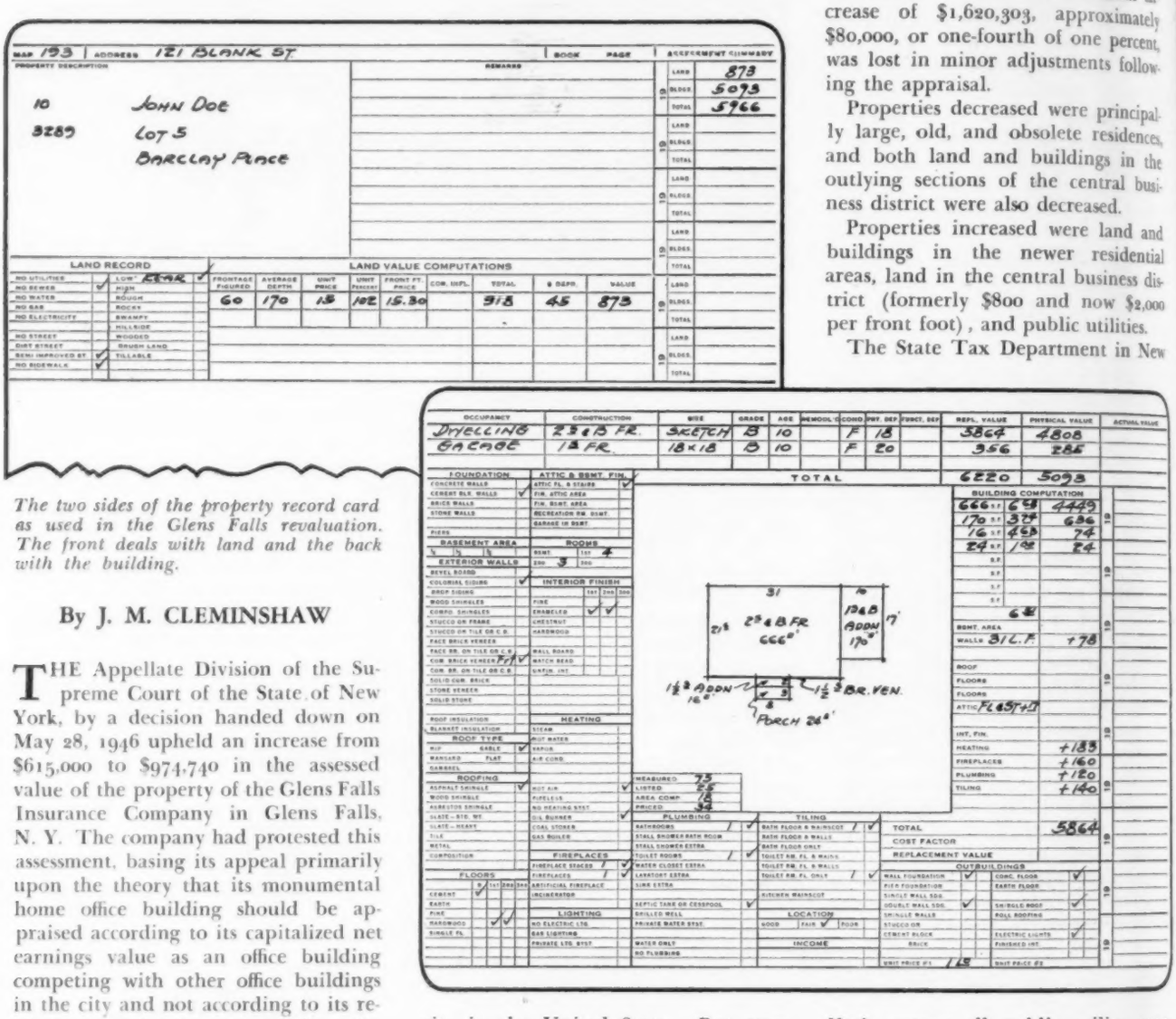
The ten-year program of the Chicago Plan Commission indicates the desirability of a number of shoreline and harbor improvements—expansion of harbor facilities under unified control, rehabilitation of much of the shoreline protection and parks, building of several new shoreline parks, construction of a shoreline expressway, and the development of a civic center on the Chicago River west of the Loop.

Chicago shoreline improvements and park extension are in the hands by the Chicago Park District, which has under way a 60-million dollar program for new parks throughout the city and extension of the lakefront improvement north of Foster Avenue. The estimated total cost of lakefront improvements planned in Chicago approaches 200 million dollars. Although bond issues have been approved for some parts of this work, no major work is in progress.

(*Continued on page* 161)



How Property Revaluation Has Benefited Glens Falls


MAP 193 | ADDRESS 121 BLANK ST | BOOK | PAGE | ASSESSMENT SUMMARY

PROPERTY DESCRIPTION

10 JOHN DOE
3289 LOT 5
BARCLAY PLACE

REMARKS

		LAND	BLDGS	TOTAL
19		878	5093	5966

LAND RECORD

NO UTILITIES	✓	LOW	CLEAR	✓							
NO SEWER		HIGH									
NO WATER		ROUGH									
NO GAS		ROCKY									
NO ELECTRICITY		SWAMPY									
		HILLSIDE									
NO STREET		WOODED									
DIRT STREET		BRUSH LAND									
RENO IMPROVED ST.	✓	TILLABLE									
NO SIDEWALK	✓										

LAND VALUE COMPUTATIONS

	FRONTAGE FIGURED	AVERAGE DEPTH	UNIT PRICE	UNIT PERCENT	FRONT FT. PRICE	COR. INFL.	TOTAL	% DEPR.	VALUE
	60	170	18	102	15.30		918	45	873

		LAND	BLDGS	TOTAL
19				

OCCUPANCY	CONSTRUCTION	SIZE	GRADE	AGE	REMODL	COND	PHY. DEP.	FUNCT. DEP.	REPL. VALUE	PHYSICAL VALUE	ACTUAL VALUE
DWELLING	2 & 1 B FR.	SKETCH	B	10		F	18		5864	4808	
GARAGE	1 B FR.	18×18	B	10		F	20		356	285	
								TOTAL	6220	5093	

FOUNDATION: CONCRETE WALLS; CEMENT BLK. WALLS ✓; BRICK WALLS; STONE WALLS; PIERS

BASEMENT AREA: ¼ | ½ | ¾

EXTERIOR WALLS: BEVEL BOARD; COLONIAL SIDING ✓; DROP SIDING; WOOD SHINGLES; COMPO. SHINGLES; STUCCO ON TILE OR C.B.; FACE BRICK VENEER; FACE BR. ON TILE OR C.B.; COM. BRICK VENEER F/F ✓; COM. BR. ON TILE OR C.B.; SOLID COM. BRICK; STONE VENEER; SOLID STONE

ROOF INSULATION; BLANKET INSULATION

ROOF TYPE: FLAT; GABLE ✓; GAMBREL; MANSARD

ROOFING: ASPHALT SHINGLE ✓; WOOD SHINGLE; ASBESTOS SHINGLE; SLATE—STD. WT.; SLATE—HEAVY; TILE; METAL; COMPOSITION

FLOORS: CEMENT; EARTH; PINE; HARDWOOD; SINGLE FL.

ATTIC & BSMT. FIN.: ATTIC FL. & STAIRS ✓; FIN. ATTIC AREA; FIN. BSMT. AREA; RECREATION RM. BSMT.; GARAGE IN BSMT.

ROOMS: BSMT.; 1ST 4; 2ND 3; 3RD

INTERIOR FINISH: PINE; ENAMELED ✓ ✓; CHESTNUT; HARDWOOD; WALL BOARD; MATCH BEAD; PLASTER, INT.

HEATING: STEAM; HOT WATER; VAPOR; AIR COND.; HOT AIR ✓; PIPELESS; NO HEATING SYST.; OIL BURNER ✓; COAL STOKER; GAS BOILER

FIREPLACES: FIREPLACE STACKS 1 ✓; FIREPLACES 1 ✓; ARTIFICIAL FIREPLACE; INCINERATOR

LIGHTING: NO ELECTRIC LTG.; GAS LIGHTING; PRIVATE LTG. SYST.

MEASURED 75; LISTED 25; AREA COMP. 18; PRICED 34

PLUMBING: BATHROOMS 1 ✓; STALL SHOWER BATH ROOM; STALL SHOWER EXTRA; TOILET ROOMS 1 ✓; WATER CLOSET EXTRA; LAVATORY EXTRA; SINK EXTRA; KITCHEN WAINSCOT; SEPTIC TANK OR CESSPOOL ✓; DRILLED WELL; PRIVATE WATER SYST.; WATER ONLY; NO PLUMBING

TILING: BATH FLOOR & WAINSCOT 1 ✓; BATH FLOOR & WALLS; BATH FLOOR ONLY; TOILET RM. FL. & MAINS; TOILET RM. FL. & WALLS; TOILET RM. FL. ONLY 1 ✓

LOCATION: GOOD | FAIR ✓ | POOR

INCOME

BUILDING COMPUTATION

666 S.F.	6.6	4429	
170 S.F.	3.7	636	
16 S.F.	4.6	74	
24 S.F.	1.00	24	
S.F.			
S.F.			
S.F.			
	6.2		
BSMT. AREA			
WALLS 31 L.F.		+78	
ROOF			
FLOORS			
FLOORS			
ATTIC FLOOR			
INT. FIN.			
HEATING		+183	
FIREPLACES		+160	
PLUMBING		+120	
TILING		+140	
TOTAL		5864	
COST FACTOR			
REPLACEMENT VALUE			

OUTBUILDINGS: WALL FOUNDATION ✓; CONC. FLOOR; PIER FOUNDATION; EARTH FLOOR ✓; SINGLE WALL SDG.; DOUBLE WALL SDG. ✓; SHINGLE WALLS; SHINGLE ROOF ✓; ROLL ROOFING; STUCCO ON; ELECTRIC LIGHTS ✓; CEMENT BLOCK; FINISHED INT.; BRICK

UNIT PRICE #1 1.15; UNIT PRICE #2

The two sides of the property record card as used in the Glens Falls revaluation. The front deals with land and the back with the building.

By J. M. CLEMINSHAW

THE Appellate Division of the Supreme Court of the State of New York, by a decision handed down on May 28, 1946 upheld an increase from $615,000 to $974,740 in the assessed value of the property of the Glens Falls Insurance Company in Glens Falls, N. Y. The company had protested this assessment, basing its appeal primarily upon the theory that its monumental home office building should be appraised according to its capitalized net earnings value as an office building competing with other office buildings in the city and not according to its replacement value less accrued depreciation. Denial of this appeal by the local Grievance Board was followed by similar decisions by the Supreme Court and its Appellate Division in which the new valuation was fully affirmed. This decision the Court of Appeals has refused to review.

The revaluation of the insurance company's property was one of the many benefits to the majority of Glens Falls taxpayers resulting from the action of the city in January 1941, in letting a contract to The J. M. Cleminshaw Company, appraisal engineers, of Cleveland, Ohio, for the complete revaluation of all taxable and exempt real estate and public utilities.

Glens Falls, with a population just under 20,000, is considered on a per capita basis to be the second wealthiest city in the United States. But even cities of wealth and prestige have assessment and equalization problems. This one was primarily that of equalization. Tangible personal property is not assessed in the state of New York, so the burden of local government is borne principally by real estate.

The New York State Department of Taxation does a very thorough job of determining the ratio of assessed value to actual value in each taxing district. State income, franchise, and other state taxes are equalized and distributed on this basis. The state equalization rate for Glens Falls was set at 98%, evidence that values as a whole were close to the upper limit.

The appraisal of all property was on normal, full, or 100% value basis. The same values were used for tax assessment purposes.

The 1941 grand list of all taxable property was $31,229,076. The 1942 grand list was $32,849,379. Approximately 60% of properties were decreased and approximately 40% were increased in value. Of the total increase of $1,620,303, approximately $80,000, or one-fourth of one percent, was lost in minor adjustments following the appraisal.

Properties decreased were principally large, old, and obsolete residences, and both land and buildings in the outlying sections of the central business district were also decreased.

Properties increased were land and buildings in the newer residential areas, land in the central business district (formerly $800 and now $2,000 per front foot), and public utilities.

The State Tax Department in New York assesses all public utility properties "on public streets, highways and places." The local assessor is therefore required to assess all public utilities "not on public streets, highways and places." For some unknown reason quite a bit of this property had never been assessed before. At any rate, the increases ran from 250% to 600%. Despite this, each public utility company was fair and straightforward in its dealings with the appraisers.

The city now has a complete set of accurately prepared property records, a thorough and accurate appraisal, and a property accounting system. Property owners can now make intelligent comparisons of properties anywhere in the city. In addition to that, they have the assurance that each owner pays solely according to value.

Waterbury Children Learn City Planning First Hand

By SANDO BOLOGNA

BECAUSE OF A NOVEL course at their school, certain students at Crosby High School, Waterbury, Conn., know more about city planning for their community than the average Waterbury adult.

This course in city planning is believed to be the only one of its kind in New England. Educators and city planners have praised its results at the annual New England Town Planning Association exhibition in Boston, where student charts have won certificates of merit annually since 1943.

To stimulate interest in drawing, Charles E. Woodlock, mechanical drawing teacher, introduced the course four years ago, with the approval of Principal Louis J. Thibodeau. Convinced that city planning is a modern subject which must be treated with progressive educational methods, Mr. Woodlock maps out a full year's agenda for a one-hour class meeting twice weekly.

Between 16 and 20 upper grades' students preparing for colleges are selected for the course. But when lecturers come to the class, the audience of interested students and teachers invited to sit in becomes so large that sessions are held in the assembly hall. Each of the 14 lecturers speaks one hour. Students are invited from the history, science, economics, civics, biology, social studies and drawing classes. Great emphasis is placed upon correlation.

The first lecturer is Mayor John S. Monogan, 35-year-old lawyer, who discusses informally the functions of his office in regard to city planning and other municipal affairs. The next lecture, given two weeks later, is presented by City Planner L. T. Scott-Smith, engineer for the City Plan Commission, which devised an ambitious six-year post-war planning program. The class has one of the commission's planning books, profusely decorated with graphs and highlighted with breakdowns of estimated costs of a multitude of proposed projects.

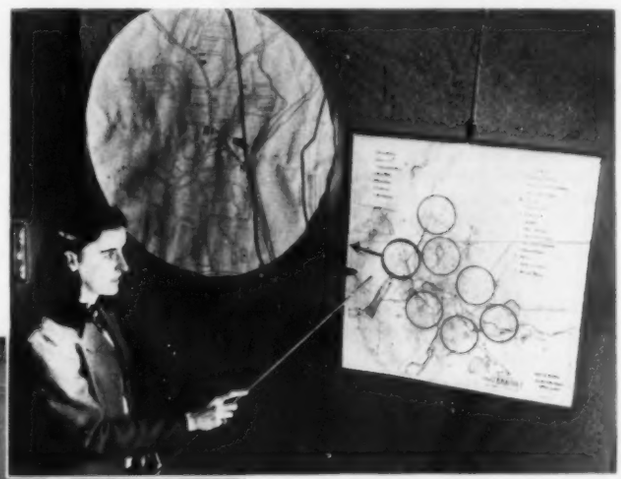
All phases of municipal government are discussed by departmental heads, including the controller, public safety, health, enginering, recreation, and assessments chiefs. An FBI agent and industrial leaders also speak. Sidney Edwards, director of the State Development Commission, discusses the relationship of city planning to state and metropolitan planning. The speakers are always barraged with questions.

Following the lectures, the students usually submit written reports of what they heard. They follow up the municipal problems and plan projects with field trips to water and sewage plants, police department, fire department, aldermanic meetings, and zoning hearings.

From a large-scale map of Waterbury, the class members identify the major thoroughfares, secondary arteries, parks, schools, churches, firehouses, shopping centers, etc. Then neighborhoods are segregated and studied. Mr. Woodlock assigns each student to make a survey of his own neighborhood, taking in such subjects as housing, playgrounds, utilities, zoning, shopping facilities, police and fire protection. The youngsters interview their parents and other community adults to get their individual and collective ideas on needs for community improvements. Then they write their conclusions in analytical reports, some of which are attached to well-drawn charts or illustrative material.

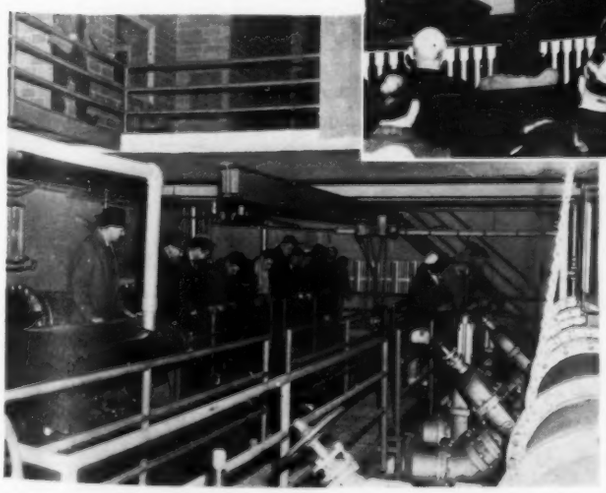
Feeling that Crosby students are greatly stimulated by the course, Mr. Woodlock believes city planning is a vitally important subject for the modern high school.

"Our young people," he has said, "should be given more encouragement in the study of city planning so that they can get first-hand information on the problems being considered by their municipality. The knowledge that Crosby students gained in city planning has been evidenced in their leadership at various colleges."



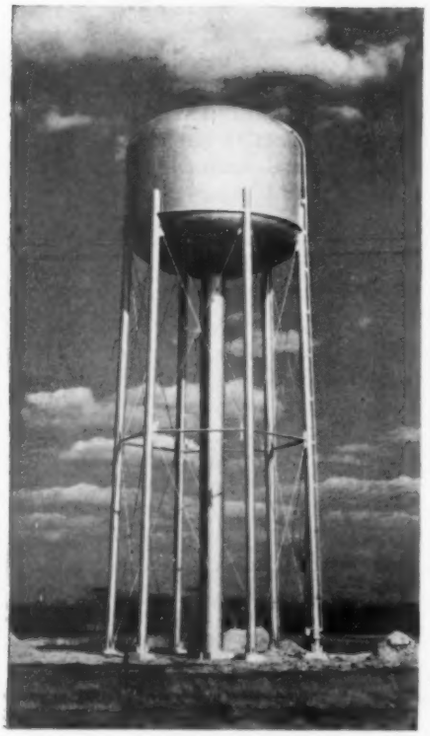
RIGHT: *Students learn to understand and use city planning maps.*

CENTER: *At the right in the group of spectators at this zoning hearing before an aldermanic committee is Charles E. Woodlock, who developed the city planning course, with a group of students.*



LEFT: *L. Theodore Scott-Smith, engineer in the Waterbury City Plan Commission, shows Crosby students the machinery at the control station of the city's water supply system.*

Post-War Water Storage Tanks



This new 200,000-gal. overhead storage tank serves Pittsfield Village, Ann Arbor, Mich. Notice the streamlined construction and the substitution of a stiffening girder for the customary balcony.

ALL-WELDED construction is a trend in post-war elevated water storage tanks, as shown by the two illustrations here. One is a new tank serving Pittsfield Village, Ann Arbor, Mich. The other is a duplex tank storing both water and fuel oil.

The tank at Pittsfield Village, which was erected by the Chicago Bridge and Iron Co., has a capacity of 200,000 gallons and is 82 ft. above ground level. The tank has a stiffening ring girder instead of the customary balcony. It is located about 600 ft. from the pumping station and serves the entire village. There are three pumps in the pumping plant, two of 160 gpm and one of 220 gpm, all working against a 120-ft. head. The tank's tubular legs add grace to the structure and accentuate its streamlined appearance.

The duplex tank, designed by R. D. Cole Mfg. Co., Newnan, Ga., has the novel feature of permitting the storage of both water and fuel oil in the same structure. The water tank holds 25,000 gallons and the fuel-oil tank 15,000. In order to conserve space, the lower tank is of Cole ovaloid construction and the upper tank is a Cole water storage roof.

This duplex tank of all welded construction will handle both water and fuel oil conveniently. The upper tank will hold 25,000 gal. of water and the lower 15,000 gal. of fuel oil.

Federal Funds Available for Hospital and Medical Equipment

NEW legislation, which became law on August 13 when it was signed by President Truman, makes it easier for municipalities to build new hospitals or enlarge existing facilities.

The Hospital Survey and Construction Act may mean the expenditure over the next five years of $1,125,000,000 to "provide more and better medical care for the people of the country." The legislation authorizes the federal government to contribute one-third towards the cost of surveying the need for and building or equipping new hospitals, health centers, and related facilities in accordance with needs shown in all-over state plans. The government's share of the aggregate planned cost will amount to $375,000,000, plus $3,000,000 for preliminary survey and planning, with the balance of $750,000,000 coming from the states, cities, and other political subdivisions. Private non-profit hospitals, public health centers, and related facilities may also share in the federal grants-in-aid.

The distribution of the federal funds among the states will be determined on the basis of population and the ratio of each state's per capita income to the national income. The administration of the funds will be vested in the office of the Surgeon-General, with the advice and consent of a newly established council composed of persons who are not full-time government officials. The council will act in an advisory capacity and will exercise the power of veto over certain actions by the Surgeon-General. Moreover, the act contains a provision permitting a state agency to appeal to the federal courts when dissatisfied with a decision by the Surgeon-General, whose discretionary powers, insofar as his right to deny is concerned, are limited.

Some Facts on Corrosion Control

HERE ARE SOME points that will be helpful in maintaining a high Hazen-Williams coefficient in water distribution systems. They were brought out during a round table discussion at the recent New York Section meeting of The New American Water Works Association held in Elmira, N. Y.

1. Chlorine-ammonia has a certain amount of value in this type of treatment except for pH values varying between 6.5 and 6.7.
2. The use of soda ash instead of lime has merit in its freedom from deposits in hot-water tanks and on glassware. However, the added expense that it incurs must be balanced against the value received.
3. Pipe lining for corrosion insurance has merit despite the character of the water produced. Since distribution systems constitute the biggest portion of a water supply system, the slight amount of additional money involved in the lining represents an excellent safeguard of the investment.

An Economic Analysis of Central Heating

By the late
ROGER D. DE WOLF
Consulting Engineer
Rochester, N. Y.

CENTRAL steam is the modern method of supplying steam for space heating, water heating, process work in industry, and when an ample supply of cheap water is available, refrigeration and air conditioning, sold on a convenient metered basis, just as electricity, gas, and water are supplied today.

A modern steam plant is usually located away from congested downtown areas and replaces hundreds of obsolete, inefficient individual plants now in use in stores, office buildings, hotels, apartments, and public buildings, in the area served.

In a building served by central steam, a simple hand valve or automatic control replaces the entire boiler plant. Steam is instantly available from a network of underground pipes connected to the central boiler plant.

Is Central Steam New?

Positively not. Central steam plants have been in use for nearly 70 years in this country. At present around 200 plants are serving the public, and an unknown number, probably large, are selling steam privately. In Canada and many other countries steam is distributed from a central plant. Many colleges, universities, hospitals and sanatorium groups are served by remote, secluded steam plants.

Present Status of Central Steam Plants

Many of the early systems failed because of poorly designed equipment (the best available at the time), faulty rate schedules, and other factors unknown to a new industry. Today, however, a wealth of experience from hundreds of installations, plus technological improvements in steam generation and distribution, make possible an accurate study of the market for central steam and its economic practicability in any community.

There is probably no industry as inconsistent in its selling prices as the central steam industry. There are several factors involved which partly explain the reason for the large variations and inconsistencies, but in most cases the reason is that steam has been sold as a commodity and not as a service that includes convenience, safety, cleanliness, and overall economy.

The most probable explanation of these inconsistencies and others which are available in printed statistics is the fact that none of these companies is really in the steam business. They are in the electrical business, and they operate a steam division purely as an umbrella over their rate schedule. Their methods are many and varied and none of them does much of a job in saturating the areas served.

To understand the difference in revenue per thousand pounds of steam among the various companies, and to interpret it in the light of fuel costs and load factors, certain facts are necessary. Special rates and/or rental of existing boiler plants and their effect on recorded net earnings are not reflected in the figures quoted generally. The rental paid for the customer's boiler plant is charged against the steam operation and affects the net income adversely, and seriously so. Other methods for making special rates under special conditions (bookkeeping, etc.) must be considered in analyzing the steam business as a profitable business. A company selling steam only was prosperous and rapidly expanding until acquired by an electric utility company, when the records showed a startling drop in earnings of the steam division. Still another factor to be considered is the reluctance or outright refusal on the part of the combination plant to sell steam for power purposes, which is a substantial profit-determining factor in the steam business. There are also records of subsidiary coal companies being used to control the economy of the steam division of the electric utility company.

These inconsistencies are pointed out as examples of the disadvantages of the central heating plant. To make money is, of course, the incentive for operating a central heating plant, and a justifiable one; but the facts should be understood. The competitive cost of steam generation in isolated plants usually determines the rates which a central plant can get. This factor explains why some central plants operate at a loss.

Is Central Steam Practical?

A central steam system, properly organized and managed and with prime factors favorable, is a self-liquidating project and one that pays fair returns on the investment. Such a system represents a nominal investment for either private local capital or for any municipality. In one city, for example, the YMCA Building Committee reported as follows: "One reason why the new building is urgently needed is that the boiler and engine room are now so old and uncertain that within a few years the underwriters will surely insist on operating at a reduced pressure." (In this same city, most of the boilers in use are as old as, or older than the YMCA boiler.) The cost of boiler-room fuel storage and chimney, according to the architect's plan for this new YMCA building, would call for approximately $75,000 and 3,000 sq. ft. of floor space. A central plant would save this money and floor space, and simplify operating problems.

Civic Dividends Derived

Smoke, soot, coal dust, and ash dust are reduced, which makes any city a cleaner, safer, and more healthful place to live. The cost of cleaning and maintaining buildings is greatly lowered. Smoke indicates fuel waste, and smoke and soot cost cities with one million population from 6 to 10 million dollars per year for extra labor and materials for cleaning.

The average large department store in these cities spends $20,000 to $50,000 a year to replace soiled merchandise and to pay for labor and materials needed to overcome the damage done by smoke and soot; hotels, hospitals and office buildings, somewhat less. The average dwelling requires cleaning to the tune of at least $50 per year, apart from the cost of deterioration of clothes and home furnishings of all kinds. Central steam eliminates most of this needless expense.

The problem of smoke and soot control has become serious enough to require special smoke-abatement committees, surveys, etc., which are expensive to organize, and operate too often with little tangible benefit. A few difficulties of smoke and soot control are:

1. Many of the boilers in private plants are built so that they cannot be fired without making smoke. It would be very costly, if not impossible, to reset these boilers to overcome this inefficiency.

2. Boiler-room labor is generally hard to obtain because conditions are not attractive, and the labor is therefore indifferent and/or inexperienced.

3. Much of the coal now available is of poor quality.

The elimination of boiler rooms and coal bins by central steam restores

valuable space for income-producing use, as workrooms, cafeterias, offices, shipping rooms, garages, etc. Unattractive, poorly-paid work such as that of shoveling coal and ashes and cleaning boiler tubes is abolished.

Ash trucks, ash cans, and coal trucks are kept off already overcrowded city streets. This means large savings in the cost and maintenance of publicly-owned equipment and buildings, not to mention the large costs of maintaining operating personnel. The money savings to the taxpayer are very large in many departments of the city government.

Fire hazards and explosion risks are minimized when premises are cleared of boilers and stored or burning coal. Lower insurance rates should therefore apply.

Fuel is conserved when coal is burned in one efficient modern plant rather than in hundreds of obsolete plants fired by careless or inexpert operators. Twenty to 40% of all fuel burned in the average heating plant is wasted. The records of central steam systems now in operation show a reduction in fuel consumption of 15% to 30%.

The central steam company makes no charges for service when steam is not used. Individual plants require summertime maintenance and repair, and the firing staff must be kept on the pay roll. With central steam, all costs stop the minute steam stops flowing through the meter. The customer pays only for what he actually uses, at reasonable metered rates controlled in almost every state by a Public Service Commission.

Central steam can be said to encourage construction, since expensive boiler equipment need not be purchased for each new building, and more square feet of floor space are made available on the same amount of land. Old buildings can be modernized at lower cost. Any city with central steam will attract new business and new industry which will pay handsome civic dividends.

Summary of Benefits

Central steam is of definite value to any city, because it tends to make it cleaner, safer, more healthful. It encourages new building, which results in increased tax revenues. It relieves traffic congestion and lowers the cost of ash collection. It lowers operating costs by reducing the number of employes and the amount of equipment, etc., otherwise needed. Furthermore, the steam required in public buildings is obtained at low cost from the central steam system.

Central heat is of benefit to building owners and managers, because it lowers operating and maintenance costs, simplifies labor problems, and gives them more profitable use of their property;

Architects and prospective builders also profit from steam heat because it lowers building costs, simplifies building design, and provides more usable space at reduced operating and maintenance costs.

Scarsdale Wants a Swimming Pool

DOES Scarsdale want a community swimming pool? This question was put directly to the residents of this Westchester community recently by means of a questionnaire and their answer was "yes."

In June 1945, as part of a general program of post-war planning, the mayor of the village of Scarsdale appointed a recreation committee of 28 citizens to investigate and make recommendations with respect to the possible construction of a swimming pool.

The recreation committee decided to take the matter to the people of Scarsdale and distributed a questionnaire designed to answer the following questions: Should a swimming pool be provided as part of a community center, or elsewhere? When should it be built? Where should it be located? What should be its character and size? How should it be controlled? By whom would it be used? How much should it cost? How should it be financed?

The committee itself made certain definite proposals as to the location and construction of the proposed pool, which were reported in detail in the *Scarsdale Inquirer.* The newspaper story was reprinted and distributed together with the post-card questionnaire reproduced here.

The questionnaire was mailed to the water department list and was hand-delivered to tenants in the business and apartment house area. A total of 3,270 copies were distributed, and approximately 40% were returned. Of these, 848 were in favor of the construction of a pool, and 516 were opposed.

Plan 1 proposed by the recreation committee—which would provide for three pools, a beginners' pool, 25 x 50 ft., a swimming pool 100 x 75 ft., and a diving pool 75 x 40 ft.—was favored 703 to 141.

A total of 2,547 persons were noted as probable users of the pool. This figure, coming as it does from only 40% of the families quizzed, indicated a substantial patronage. It is interesting to note that of those who answered the question as to ownership of property, 1,252 were owners and 79 were renters.

The questionnaire asked for remarks, and a large number of comments came in to the committee. Of those opposing the pool, 35 remarked that taxes are now too high. Twelve persons stated that relief for the residential shortage should come before the construction of the pool, but 28 urged immediate construction of the pool.

The recreation committee has passed all this information on to the mayor of Scarsdale; and any action, when taken, will have to do with the recreation program as a whole, of which the swimming pool is one feature.

QUESTIONNAIRE ON SWIMMING POOL

To be filled out after you have read the enclosed report

1. I $\frac{\text{am}}{\text{am not}}$ in favor of a public outdoor Swimming Pool in Scarsdale.
2. I prefer Plan 1 (for three pools)
   Plan 2 (for one pool)
3. I favor financing the cost of construction by
   A. Public Bond Issue (maximum 10 years)
   B. Public Cash (pay-as-you-go over 2 year period)
4. How many of your family would use the pool?
5. Do you own property in Scarsdale? Yes ..... No .....
6. Remarks

The purpose of this questionnaire is to find out if Scarsdale people want a swimming pool. It is important that you return this questionnaire within one week. It will be used as a guide in the recommendation of the Recreation Committee to the Village Board.

NAME .....

ADDRESS .....

Recreation committee appointed by the mayor devised this questionnaire.

How to Whip a Snowstorm

Even a big storm isn't too difficult if you have the right equipment, a well-organized crew, and cooperation from the police department

After the storm is over the city uses this grade to plow the snow to the center of the streets for easier removal.

By GEORGE KLING
Superintendent, Department of Streets and Highways
Union, N. J.

OUR FIRST important snowfall of the season started about midnight of Tuesday, December 18, 1945. By 8 a.m. the next day it had reached a height of 3 ft. That morning the regular employes of the road department and an additional driver attached snow plows to the five municipal trucks and the township-owned grader and a pair of hired trucks, to give us a total of 8 snow plows, or one more than we had in previous years.

The first truck left our yard at 8 a.m., the seventh at 9:15. We held two trucks in reserve, one of which had a four-wheel drive unit suitable for towing and drift work.

We experienced almost no loss of time from breakdowns. Plowing continued all that day and night, with the last man leaving the garage at 6:30 p.m. on Thursday. This meant that we had piled up a total of 34½ hours of continued work, with time off only for meals.

The streets had been plowed to their full width, from curb to curb. At 3 p.m. Thursday some of the plow men who returned earlier than the others loaded 4 tons of calcium chloride on a truck and spread it on key streets and the municipal parking area, to prevent the packed snow from freezing to the road, and to make removal work easier on Friday.

Through Police Commissioner Robert R. Lackey we received the full cooperation of the Department of Public Safety. Without the aid of the police we would have been seriously handicapped in our work. Early Friday morning "No Parking" signs were placed on the parking meters. The street department also placed its "No-Parking—Snow Loading" signs in the business center section. Chief of Police Denk arrived at 6:30 a.m. with two officers and did a splendid job of preventing the difficulties that might have been created by parked cars and snarled traffic. We had almost no trouble with parked cars while we were in the process of removing snow from this district.

At 6:30 Friday morning our grader started its work of plowing the snow to the center of the street, to be loaded into the trucks. At 7 o'clock we began loading snow into our three trucks with the Nelson snow loader. At 7:30 three hired trucks arrived. (On all trucks we had raised the sides of the body to increase their capacity from 5 to 9 cu. yds. Two of our hired trucks, however, had a capacity of less than 7 cu. yds.)

By carefully windrowing the snow and using the loader we were able to load a truck in 1¼ minutes.

The time consumed in backing under the loader and pulling away after loading is about 1½ minutes. Because of the increased capacity of the trucks, however, we saved about 80% of the time formerly lost in backing under and pulling away from the loader.

We moved 90 loads of snow from the center business section, with an average of 7 cu. yds. to the load, making a total of 630 cu. yds. The total time consumed in removal was 5½ hours, or 330 minutes. Therefore, we loaded and removed one truck of snow in 3 ⅓ minutes, which figures about 2 cu. yds. per minute. The slight discrepancy in figures is due to time taken to turn the snow loader around at the end of each trip.

The loader started on Stuyvesant Avenue at 7:00 a.m. Friday. By 8:15, before the merchants opened their stores, the snow was completely removed from the entire block between Axton and Morris Avenues. This is one of our busiest streets, located in the heart of our business district. In previous years the removal of snow from this particular section had taken four hours.

While the snow was being loaded in the first block, our grader was plowing the snow to the center of the street on Morris Avenue between Stuyvesant and Pine Avenues. The snow loader and trucks then loaded and removed the snow from this block. While there was less snow to be removed, the narrowness of street and its heavy traffic caused some slight delay.

Grader, loader, and trucks worked in this fashion until the final section of

A Nelson snow loader transfers the windrow into a waiting truck. Time consumed in backing under and pulling away from the loader is about 1½ minutes.

AMERICAN WELL WORKS ENTERS

New Period of Growth

TO MEET UNPRECEDENTED DEMAND FOR MODERN WATER, SEWAGE, AND INDUSTRIAL WASTE TREATMENT

Within the past year, we have strengthened our engineering staff, modernized our plant facilities, and created additional manufacturing capacity to increase production four to five times. Our staff of Sanitary Engineers is available for recommendations on the type of treatment and equipment best suited to your needs.

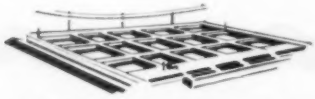
I. G. Grawoig, President

Water Treatment

Installation-tested equipment for complete municipal and industrial systems or individual units . . . Flocsettler, Ferrofilter (for iron and carbon dioxide removal), Mixing equipment (Downflo Flocculation unit, Recarb unit, Downdraft Aerator, and Rapid Mix Turbine unit), Zeolite Softener, Vertical Pressure Filter, Contact Aerator Backwashable, and sludge removal equipment for sedimentation basins.

Sewage Treatment

An inclusive line of equipment for all types and capacities of sewage plants . . . screenings and grit removal, grease flotation and skimming, sludge removal, distribution, filtering, and aerating equipment. Also complete trickling filter, activated sludge, and bio-activation plants. Designed by Sanitary experts, they are the product of close collaboration in the equipment engineering of sewage plants throughout the world.



Industrial Wastes

Since industrial waste treatment methods coincide with those practiced in sewage disposal, our sewage equipment has found wide application in the handling of industrial wastes. Our Sanitary staff is exceptionally well qualified to prescribe methods and equipment for waste treatment in the process industries.

Pumps

As pioneers in the invention and manufacture of deep well, clear liquid transfer, and sewage pumps, American Well Works has thousands of installations throughout the world filling exacting assignments over long periods. Detailed information furnished on all types and capacities of deep well turbines, double-suction, single and two-stage centrifugal, mixed and axial flow, sludge, and sewage pumps.

Research and Engineering

American Well Works maintains a staff of Sanitary engineers for research and to make recommendations on the type of treatment best suited to your water or sewage problem. These engineers are also well qualified to make concrete recommendations on the equipment engineering phases of the work to your consulting engineer.

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100 North Broadway
AURORA, ILLINOIS

Pumping, Sewage Treatment, and Water Purification Equipment
RESEARCH • ENGINEERING • MANUFACTURING

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SEND FOR HELPFUL TECHNICAL BULLETINS

Cover all phases of Pumping, Sewage, Water, and Industrial Waste Treatment methods, and fully describe and illustrate required equipment. Send for the particular bulletins you desire.

LEFT: *A street in Union immediately after a snow storm. Calcium chloride prevents the snow from freezing fast to the streets.*

BELOW: *The same street after it has been cleared of snow.*

Morris Avenue from Stuyvesant Avenue to the municipal parking area was cleared from curb to curb.

The removal of all snow in the business section was completed by 12:30 p.m., a total of 5¼ hours for the entire job. Our previous records show that the removal of this much snow had never been accomplished in less than 24 hours. The time thus saved was not only an economy for the municipality, but a great convenience to merchants, pedestrians, and drivers.

The merchants cooperated with us to the fullest extent; all but one had had the snow removed from the sidewalks before we began our work.

In order to prevent the streets from becoming slippery because of snow blowing from the roofs of buildings or being carried from other sections of town, our trucks started out at 1 o'clock to cinder all important intersections, returning to the garage at 4:30. These same trucks and men started out again Saturday at 8 a.m. and completed their cinder work at 5:30 the same day.

Minor repairs to plows and other equipment were made with little loss of time in our well- equipped garage. Had any major repairs been required, we could have taken care of them in our shop. We have on hand a complete stock of repair parts, including steel of various sizes and weights and 200 different sizes of bolts and nuts. We also have both electric and acetylene welding outfits, for making repairs and additional parts when required, a lathe, a drill press, and a battery charger capable of charging 12 batteries at once. We always keep 6 fully-charged batteries on hand. An arbor press is also part of our equipment. Without this equipment, we would have difficulty in making repairs because of the impossibility of obtaining outside shop facilities 24 hours a day.

Chlorine Residual Will Inactivate Polio Virus

FREE CHLORINE residuals within the range of normal water dosage will inactivate the polio virus, and the effectiveness of the residual does not depend on the type of chlorine-bearing compound so long as the equivalent oxidation potential of free chlorine exists. This statement was made by G. M. Ridenour and R. S. Ingols of the University of Michigan School of Public Health, on the basis of research aided by a grant from the National Foundation for Infantile Paralysis and described in an article in the June issue of the *American Journal of Public Health*.

Previous investigation had indicated that the amount of chlorine and time of contact required for disinfection against the polio virus were beyond practical limits. Thus, if poliomyelitis were a water-borne disease, chlorination would not be practical. The authors point out, however, that these investigations were based on the orthotolidine test, which measures not only uncombined chlorine, but also various other chloro compounds with a lesser disinfectant capacity. The authors substituted for this the recently developed orthotolidine-arsenite (OTA) test, which measures only free chlorine or its equivalent oxidation potential.

In conducting their research, the authors used water treated with chlorine or with chlorine dioxide. They found that the results were about the same for chlorine, chlorine dioxide, or a mixture of the two, provided sufficient free chlorine residual was supplied. "The results from these studies show that chlorine, now in universal use for disinfection of water, can be used in amounts which will result in inactivation of poliomyelitis virus and yet produce a satisfactory and palatable water."

In view of the marked difference in results obtained through the use of the new OTA test, the authors suggest that "methods now in operation for chlorination of community waters in general be re-examined to determine their efficiency in providing free chlorine."

They also point out that "the OTA test for residual chlorine now supplies a method of detecting the effective chlorine available for inactivation of the virus in treated water."

FOLLOW THE TREND TO MANUAL METERS

Before the war the trend was definitely automatic. The trend today is definitely manual. Why???

1. The waiting, testing period enforced by the war indicated there was not the public preference for automatics over manuals the municipalities had been stampeded into believing.
2. Time has already begun to tell the inevitable story as to much more expensive upkeep costs for the more complicated automatics (one leading automatic meter has approximately 4 times as many parts as the simplest manual).
3. A manual meter has been offered since the war that has the missing link between manuals and automatics.

Why Mark-Time Abandoned Its Automatic Model

Mark-Time engineers probably developed the simplest of automatic meters—but that model will probably never be offered for sale. During their experiments these engineers hit upon the missing link for making a tamper-proof manual meter.

Before the war the probably legitimate argument against manual meters was that the motorist could tamper with the time-setting by leaving the meter partly wound up, necessitating double checking to see if the time was up and to check against time setting. But that is no longer necessary with the new Mark-Time PERFECTION.

Missing Link Provides Tamper-Proof Manual Meter

This is a positive time-delay release that disengages the handle after a few minutes, if anyone sets the clock only part way expecting to gain time. With this revolutionary invention Mark-Time engineers proceeded to turn out the new PERFECTION meter—

The Meter That Cannot Cheat the City or the Public

Parking meters have just gone, or are just going through, the cycle vending machines (candy, gum, etc.) went through years ago—manuals to automatics and back to manuals.

Not only is the new Mark-Time PERFECTION meter tamper-proof but it contains many exclusive advantages—more rugged construction and lower maintenance costs.

PERFECTION Meters Greater Revenue Getters

Obviously, the rugged, simplified PERFECTION will set still lower upkeep cost records than were held by its predecessor, the Mark-Time Pathfinder. This means more net revenue to the city; add to that the additional revenue from those who attempt to cheat the meter, and only partly wind up, cheating themselves out of time; add to that the saving in faster checking by patrolmen; add to that the time it takes to wind up automatic meters—and you have saved a tidy net sum.

Maintenance Costs of Automatics Admitted 14 Times Greater Than Manuals in This Instance

The two largest meter installations in the country happen to be one manual and the other automatic. Figures published by Vehicular, Ltd., show operating and maintenance cost per meter of the automatic in one city over fourteen (14) times the cost per meter of manuals in the other city.*

The New Mark-Time PERFECTION Leads in Sales and Replacements**

Mark-Time has secured the largest number of orders to replace—probably more replacement orders than all other 9 meters combined—over 20 replacement contracts by

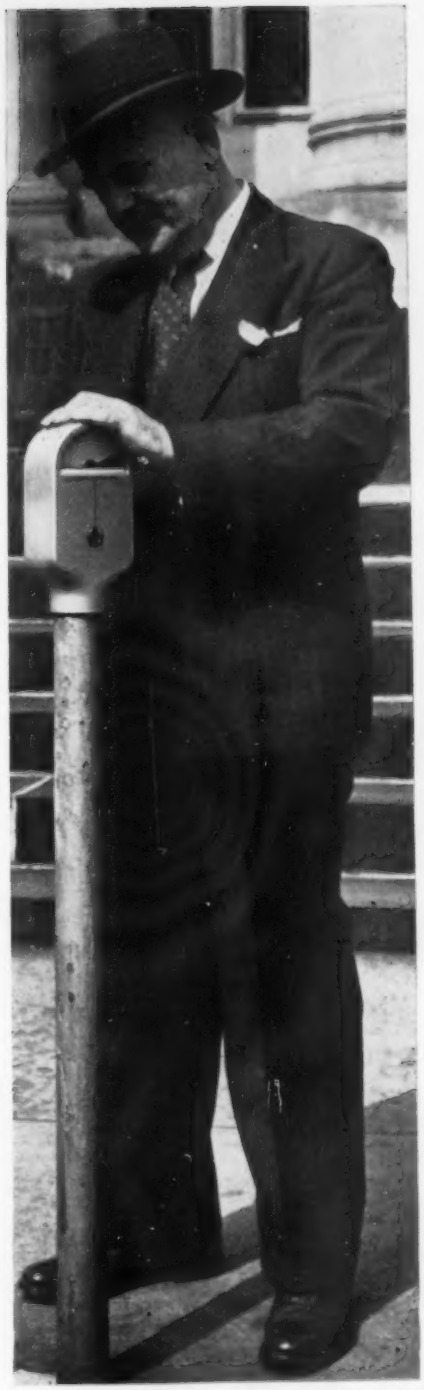
* The figures on the manuals have been verified, the city being one with Mark-Time Pathfinders.

** In the interest of accuracy and fairness Mark-Time wishes to correct an item contained in one of our field bulletins. This item listed a number of cities where Mark-Time has replaced Karpark automatic meters. Oneonta, N. Y., where Mark-Time PERFECTION replaced two meters, was listed as another Karpark replacement. We were given misinformation, as the second meter replaced turned out to be Park-O-Graf, a similar name.

ALEX MILLER *Former Automatic Salesman Operating the New 5-penny-nickel Multiple Coin* PERFECTION

Mr. Miller represented the outstanding automatic meter before he switched to the new Mark-Time PERFECTION. In less than 6 months he has sold over 10 times as many manual PERFECTIONS in his territory as all the automatic companies combined have sold since meters were introduced, and his earnings already look better than most presidents. Here is what Mr. Miller says:

> "The first time I saw the PERFECTION demonstrated was before council. I knew instantly that meter had the missing link between other manuals and automatics. I rushed to the factory and got a territory. My sales before and after say I'm glad I switched."



29 Re-Orders Best Testimonial of New PERFECTION

More new PERFECTION Sales Since V-J Day Than of Our Former Model in 10 Years Prior

Aug. 15th, with many others negotiating.

Simplified, Sealed Timer

The new Mark-Time PERFECTION is powered by the exclusive, patented Mark-Time escapement, built especially for rugged time-control operations. This is a simple device with the multiplicity of clock parts eliminated. That's why it operates in dirt or high or low temperatures where the ordinary escapement fails. The timer in the new PERFECTION is completely sealed against dirt and water although it is probably the only escapement that will operate successfully under water and it was the only escapement that apparently operated successfully in the recent Flint dust test.

Perfection Also in Visibility

The new Mark-Time PERFECTION meter also introduces up to 1000% greater visibility. *The entire face shows red when in violation.* No elusive pointer to find. This meter with the all-red violation dial is easily 200% faster for the patrolman to check . . . faster, too, because he has one thing to check.

Outwits Vandals

This meter has a 500% stronger case, a quick-change dial, burglar-proof coin window, burglar-proof bank door and theft-proof lock box for coins—all of which outwit the vandal nuisance and make easy work of servicing.

Protect Yourself—Investigate Today

Make a reputation with your constituents for selecting the best possible equipment for your city. Send for complete details of the new Mark-Time PERFECTION parking meter. Write today.

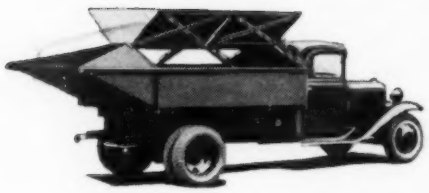
M. H. RHODES, INC.

MANUFACTURERS MARK-TIME **HARTFORD 6, CONN.**

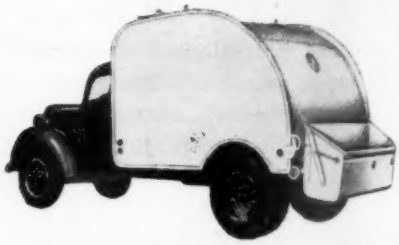
The BEST COSTS LESS

For years Gar Wood has consistently offered truck and trailer equipment of utmost utility and outstanding value. Leadership in this field resulted from this policy. Gar Wood equipment costs less in the long run because it is better built to give peak performance and lasting satisfaction.

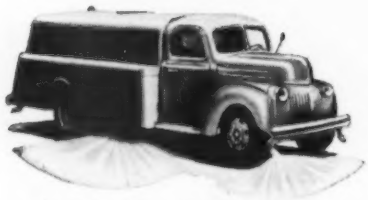
The Load Packer (patented) all enclosed garbage and refuse unit. Compresses loads hydraulically for maximum payloads.



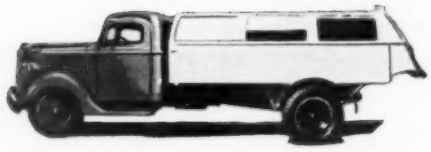
Type C28 scow end Garbage Body. Steel hinged covers extra equipment.



The new Bucket Loader, an all enclosed sanitary refuse disposal unit.

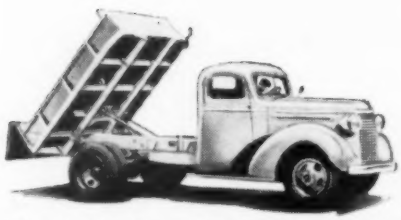


Street Flushers and Sprinklers.

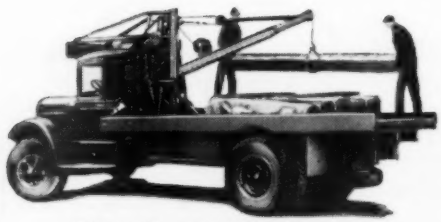


Type C50 Garbage Body with sliding steel covers on each side.

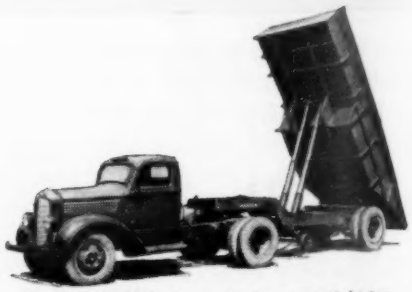
Model "QD" Tree-moving Crane. Easily erected or removed from all purpose stake body.



Type C12 Body and Model D6 or D7 Hoist. Dumping angle 55°.



Telescopic boom Crane. Boom radius 8 to 20 feet.



Special W28 Garbage Body, watertight top box. Capacity 7 cu. yds. Type T333 telescopic Hoist.

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WORLD'S LARGEST MANUFACTURERS OF TRUCK AND TRAILER EQUIPMENT

OTHER PRODUCTS: • TRUCK TANKS • ROAD MACHINERY • HEATING EQUIPMENT • MOTOR BOATS

Zoning and Planning Notes

Edited by FRANK B. WILLIAMS
Author of *The Law of City Planning and Zoning*

Public Property

ALABAMA—*City of Bessemer* v. *Huey*, Supreme Court, May 17, 1945, reported in 22 So. 2d, page 325.

This is an action to enjoin the carrying out of a lease made by the city of Bessemer of the city hall auditorium for use as a theater. The auditorium is part of the city hall. It was built with public funds, for public use, and is now being so used. The city has no express legislative authority to make the lease. The court sustains the action and nullifies the lease, ruling that the city has no implied power under the above circumstances to lease the property as it has done; for a city cannot without express legislative authority lease for private purposes or for compensation property held by it for public or governmental purposes and actually devoted to such use.

Board of Zoning Appeals—Necessity of Rule to Guide Exercise of Discretion

CONNECTICUT—*Keating* v. *Patterson*, Supreme Court of Errors, June 14, 1945, reported in 132 Conn., page 210.

The town of East Hartford adopted a zoning ordinance in which were contained regulations with regard to the erection, alteration, and use of buildings for the sale of alcoholic beverages. These regulations forbid in certain districts the use of buildings for the sale of such beverages to be consumed on the premises within a specified distance of certain other uses.

The plaintiff Keating conducted a store at 486 Main Street, in one of these districts for the sale of liquor in packages He filed an application with the Liquor Control Commission for permission to remove the store to 489 Main Street, in this same district. The application was denied upon the sole ground that it did not contain a certificate from the town clerk, as required by a regulation of the Commission, that the zoning ordinances of the town did not prohibit the sale of liquor at the new location. The plaintiff has requested the town clerk to certify the proposed location, and he has refused to do so. Apparently his action was predicated upon the refusal of the Zoning Board of Appeals to approve the removal.

The applicant appealed from the decision of the Liquor Control Commission to the Court of Common Pleas upon the ground that the town ordinance under which the Zoning Board of Appeals had acted was unconstitutional and void. The Court sustained this contention, and the town appeals to this court.

The sole assignment of error is that the lower court erred in concluding that Section 4 of an amendment to the zoning laws, with regard to the sale of liquor in packages, was unconstitutional, because it does not contain any rule or standard to guide or restrain the use of the power granted to the Board of Appeals. This court sustains the lower court, saying in its opinion:

"That there must be such rules or standards is well settled. 'A legislature, in creating a law complete in itself and designed to accomplish a particular purpose, may expressly authorize an administrative agency to fill up the details by prescribing rules and regulations for the operation and enforcement of the law. In order to render admissible such delegation of legislative power, however, it is necessary that the statute declare a legislative policy, establish primary standards for carrying it out, or lay down an intelligible principle to which the administrative officer or body must conform, with a proper regard for the protection of the public interests and with such degree of certainty as the nature of the case permits, and enjoin a procedure under which, by appeal or otherwise, both public interests and private rights shall have due consideration.' (*State* v. *Stoddard*, 126 Conn. 623, 628, 13 Atl. (2d) 586; *Connecticut Baptist Convention* v. *McCarthy*, 128 Conn. 701, 704, 25 Atl. (2d) 656; *State* v. *Van Keegan*, 132 Conn. 33, 36, 42 Atl. (2d) 352. The same principle applies when the legislative body of a municipality seeks to delegate power to an officer or administrative board. *People* v. *Norvell*, 368 Ill. 325, 13 N. E. (2d) 960; 1 McQuillin, Municipal Corporations (2d Ed. Rev.), Sec. 395; see also *Donnelly* v. *New Haven*, 95 Conn. 647, 662, 111 Atl. 897.

"Section 4 of the ordinance, standing alone, does not satisfy the tests enumerated. The defendant town appears to concede that this is true, but claims that the validity of Sec. 4 must be determined by a consideration of the zoning ordinance in its entirety, and that, when it is so considered, sufficiently definite standards are provided. Reliance is placed upon the board. Principal reliance is placed upon the preliminary statement of purpose contained in the original zoning regulations enacted in 1927: to promote 'the health, safety, morals and general welfare of the community.' The question here is subject to the rule stated. The basic legal pattern for zoning regulations is provided by General Statutes, Sec. 423, as amended by Cum. Sup. 1935, Sec. 88c, and by General Statutes, Sec. 424. Because of constitutional considerations, the requirement that such regulatory enactments shall operate uniformly and in accordance with a comprehensive plan is expressly stated. Sec. 424. The broad legislative statement of the purpose to be served by the adoption of the ordinance affords no sufficient guide for the board in the exercise of its discretion. See *Perrin's Appeal*, 305 Pa. 42, 49, 156 Atl. 305. There is no comprehensive plan prescribed and no assurance of uniformity of operation. Applicants of the same class and standing are not informed as to the conditions governing the grant of a certificate of approval. The discretion imposed in the board is so wide that it is indefinable. See 3 McQuillin, op. cit., p. 460. There is nothing in the relevant statutes or ordinances to control the whims or prejudices of its members.

"The defendant town points to apparent exceptions to the general rule in situations where it is difficult or impracticable to lay down a definite or comprehensive rule or standard, and to the fact that, even where definite standards have been furnished, the Board of Appeals (Sec. 15 [10]) has the power to modify the regulations 'in instances where there are practical difficulties or unnecessary hardships in the way of carrying out the strict letter of these regulations.' A provision of this nature is found in Sec. 3 of the ordinance under consideration. The situation here involved is not one of such complexity as to make it impracticable to prescribe reasonable guides for the exercise of discretion. In the very ordinance in question, under Sec. 1, definite standards are prescribed as to places where alcoholic liquors are sold to be consumed on the premises. The conditions and limitations to be met by an applicant are specifically stated. The restrictions prevent location within prescribed distances of other similar establishments, of churches, schools, charitable institutions, hospitals, libraries or public playgrounds, and of residential zones or lots used exclusively for residential purposes. Where the premises are to be used as a package store, however, the town council merely provided in effect that they cannot be so used unless the zoning board of appeals grants a certificate of approval. There is no standard set up, no conditions or limitations are prescribed, and no rules are given to govern the board's actions.

We conclude that Sec. 4, standing alone, constitutes an illegal delegation of legislative power to an administrative board in that it gives the latter uncontrolled power to grant or withhold certificates of approval of locations according to its unregulated discretion, and that when read in conjunction with the entire zoning ordinance Sec. 4 is invalid as in violation of the Connecticut constitution.

Public Streets—Use for Private Business

TEXAS—*Payne* v. *Massey*, Court of Civil Appeals, August 1, 1945, reported in 190 S. W. 2d, page 419.

In this action one Payne, the operator of a number of taxicabs in the city of Houston, is seeking to restrain by injunction the enforcement of an ordinance regulating the operation of taxicabs within the city and for a declaratory judgment. The ordinance provides for an annual street rental charge for each taxicab operated on the city streets, and makes it a penal offense to operate them without paying the charge.

The court finds that, the ordinance being penal, Payne is not entitled to the relief he seeks unless the ordinance is unconstitutional and Payne has a vested property right which is invaded; and holds the ordinance unconstitutional.

Payne was seeking to make extraordinary use of the streets for the purpose of carrying on a business for profit. Public streets are constructed and maintained at the public expense. No person, therefore, has or can acquire any vested right to use those streets for a commercial business.

DUAL...the meter that's RIGHT up to the minute!

DUAL—America's original automatic parking meter—has maintained its leadership in the field with continuous improvement of design and mechanism to serve more cities, more efficiently.

During the years when war production suspended the manufacture of meters, Dual engineers were on the job. They worked out many improvements to increase the over-all efficiency of Dual Automatic Parking Meters. Today, the new Duals are better than ever—ready to help you solve your increasing parking problems.

Consider these Dual advantages: Not only do Duals pay for themselves and their installation many times over, but also provide a long-term source of municipal revenue. They are attractive in appearance, easy to install and operate, wear-resistant and tamper-proof. Dual automatic mechanisms are manufactured by the makers of the famous Seth Thomas clocks.

For complete information, send today for the attractive free bulletin—"Metered Parking—Today's Answer to Tomorrow's Traffic Control Problem". Or call on Dual engineers to help survey your needs. They'll be glad to cooperate.

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HARTER BANK BUILDING • CANTON 2, OHIO

WHEN IT COMES TO CONTROLLING PARKING
YOU CAN DO IT BETTER WITH DUALS

Municipal Law Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS, Washington, D. C.
Charles S. Rhyne, Executive Director

Assessments—Timeliness of Appeal from

Statute providing that a single member of Appellate Tax Board may grant leave to taxpayer to file appeal from assessors within 10 days from entry of order must be strictly followed, and taxpayer's appeal filed more than 10 days thereafter had no standing and could be given none by Board, either as a matter of right or as a matter of discretion. *Louvre* v. *Assessors of Boston*, 66 N. E. (2d) 711 (Mass., March 8, 1946).

Civil Service—Policemen—Loss of Status Through Administrative Derelictions of Others

Where police officer of city of South St. Paul had civil service status and had complied with all civil service regulations pertaining to him as police officer, including taking of all proper steps necessary for obtaining a valid leave of absence, held that such officer was not responsible for the general administrative derelictions of Civil Service Commission of city, and did not lose status because of those derelictions. *Yaeger* v. *Giguerre*, 23 N. W. (2d) 22 (Minn., May 17, 1946). *Reh den.* May 29, 1946.

Electrical Contractors—City Regulation of as Invasion of State Statute

In action to require issuance of business license as electrical contractor, held that licensing of contractors throughout state is a matter of general and state-wide concern and is not a "municipal affair" concerning only the inhabitants of a chartered city and subject to local regulation by imposing additional requirements, since the field is fully occupied by state statutes. *Horwith* v. *City of Fresno*, 168 Pac. (2d) 767 (Cal. App., May 10, 1946).

Fingerprints—Photographs—Police Records—Surrender of Upon Acquittal—Violation of Privacy

In action to compel surrender or destruction of relator's fingerprints, photographs, and other identifying records made by city of Indianapolis police officers at time of relator's arrest on charge of misdemeanor, held that taking and filing of fingerprints of citizen by police at time of arrest was not an indignity and did not so interfere with citizen's right of privacy as to justify issuance of mandatory injunction compelling surrender or destruction of records upon citizen's acquittal, but that photographs taken of relator and placed in "rogues' gallery" for public exhibition presented *prima facie* case of violation of right of privacy. *State ex rel. Mavity* v. *Tyndall*, 66 N. E. (2d) 755 (Ind., May 24, 1946).

Hacks—Revocation of License for Refusal to Accept Passenger

In action to compel restoration of applicant's hack license, held that police commissioner of city of New York had authority to revoke license for violation of Administrative Code by refusal to accept a passenger, and hearing or testimony under oath was not required. *Romaner* v. *Williams*, 62 N. Y. S. (2d) 497 (N. Y. App. Div., May 20, 1946).

Housing Authority—Appointing Official of Members of

Where members of municipal housing authority appointed by mayor and members thereof appointed by city manager both claimed right to office, held that the city manager of Yonkers, being the chief executive officer of the city, and not the mayor, had authority to appoint members of the authority. *Schlobohm* v. *Municipal Housing Authority for City of Yonkers*, 62 N. Y. S. (2d) 541 (N. Y. App. Div., June 10, 1946).

Livestock—Ordinance Forbidding Running at Large—Publication of

Where petition for rehearing, after court determined that city had authority to enact ordinances against permitting livestock to run at large, alleged that ordinances were invalid for want of record of proof of publication of original ordinances, but did not aver that notices were not given as required by statute, held that petition was not meritorious because of application of presumption that public officers have discharged their duty in manner required by law in absence of affirmative showing to contrary. *Christie* v. *Lake City*, 25 So. (2d) 167 (Fla., April 23, 1946). *Reh. den.* June 3, 1946.

Notice of Claim—Applicability to Infant

Where city charter expressly declared that claims against city for damages or injuries to person be presented to common council and corporation counsel in writing within thirty days after occurrence thereof applies to claims of infants and all other persons, held that such provision is merely surplusage in light of general rule and did not preclude filing of claim by 10-year-old infant for injuries through her guardian *ad litem* who was appointed after thirty-day period expired in view of incapacity of infant to file claim before that time. *Staszewski* v. *City of Rochester*, 61 N. Y. S. (2d) 854 (N. Y. App. Div., May 8, 1946).

Notice of Claim—Discrepancy of Information in with Evidence

Where notice required by Administrative Code consisting of a diagram containing an X mark to indicate place where pedestrian fell on crosswalk because city had allegedly not cleaned off snow indicated a place approximately 100 feet from where pedestrian testified on trial that accident occurred, held that such variance was fatal to any recovery by pedestrian and her husband in action against city. *Cohen* v. *City of New York*, 62 N. Y. S. (2d) 455 (N. Y. App. Div., June 3, 1946).

Pigeons—Expenditure of Public Funds to Exterminate—Public Health

In suit to enjoin expenditure of public funds in exterminating pigeons in city of Philadelphia, held that where board of health decided that influx of pigeons in designated section of city constituted public nuisance endangering public health, public duty required abatement of nuisance. *Hayward v. Samuel*, 47 Atl. (2d) 251 (Pa., May 27, 1946).

Playgrounds—Accident on Sliding Board—Liability of Housing Authority

In action for injuries sustained in fall from slide by child of tenants occupying apartment in rear of which housing authority maintained playground area in which board was erected, held that authority was not liable for injuries when sliding board was of standard pattern and without defect. *Gleason* v. *Housing Authority of City of Pittsburgh*, 47 Atl. (2d) 129 (Pa., May 27, 1946).

Policemen—Liability of City for Injuries Inflicted by While Off Duty

In action to recover damages for injuries and for wrongful death, held that evidence was insufficient to hold city liable as result of member of police force, when off duty and in civilian clothes, and while intoxicated, shooting plaintiffs with service revolver, even though four months after the occurrence the policeman was diagnosed as a "paranoid deterioration type" with a "psychosis due to alcohol." *McCrink* v. *City of New York*, 62 N. Y. S. (2d) 361 (N. Y.) App. Div., June 3, 1946). App. Div., June 3, 1946).

Railroads—Validity of Ordinance Requiring Motorists to Stop at Crossings

In action against railroad company for damages for wrongful deaths, held that city of Guthrie ordinance making it unlawful for motorist to drive across or over any steam railway track within city limits without first coming to complete stop is valid when it reasonably relates to heavy and continuous flow of traffic on street, even though street is a state highway. *Hisaw* v. *Atchison, T. & S. F. Ry. Co,.* 169 Pac. (2d) 281 (Okla., April 23, 1946). *Reh. den.* June 4, 1946.

Roads—Damages for Vacation of—Obligation of City

In actions against city to recover damages for vacation of road, held that contract between landowners and city for hearing by board of commissioners on question of damages to landowners, their properties and business, caused by vacation of roads, did not bind city to pay damages in excess of legal liability in vacation proceedings or obligate city to pay consequential damages, such as damage to business. *Theiss* v. *City of Hutchinson*, 169 Pac. (2d) 615 (Kans., June 8, 1946).

Sales Tax—Applicability to Sales by City-Owned Utilities

In appeal by city from order of tax commission assessing sales tax liability against city, held that taxes upon gross receipts from sales of electric energy from municipal light plant levied pursuant to Consumers or Sales Tax Act are "excises" and not "property" taxes within the constitutional provision exempting municipalities from property tax. *City of Claremore* v. *Oklahoma Tax Commission*, 169 Pac. (2d) 299 (Okla., April 16, 1946). *Reh. den.* June 4, 1946.

Streets—Authority of City to Close for Coasting Purposes

In infant's negligence action against motorist for injuries sustained while coasting on village street, held that village which, subject to general laws of state, authorized village trustees to regulate and prohibit coasting on village streets, empowered Village of Dansville to close streets for coasting. *Lockwood* v. *Hugo*, 61 N. Y. S. (2d) 793 (N. Y. Sup. Ct., Livingston Co., April 4, 1946).

Swimming Pools—Operation by City as Proprietary Function

In action for death, held that operation by municipal corporation of public swimming pool is a proprietary and not a governmental function and the city is liable, in a proper case, for tortious acts of its officers and employes in such operation. *Felton* v. *City of Great Falls*, 169 Pac. (2d) 229 (Mont., May 1, 1946).

Taxes—Furniture in Possession of Husband

In action to collect personal property taxes, held that household furniture is properly assessed for personal property taxes to the husband, if in his possession, although title has been transferred to wife. *City of Detroit* v. *Gray*, 22 N. W. (2d) 771 (Mich., May 13, 1946).

IT'S PUBLIC TRANSIT 9 to 1

...with Washington, D.C. shoppers!

A survey made last year in the area served by Washington's Capital Transit Company revealed that 91 per cent of those who shop downtown depend on public transportation. Only three per cent use automobiles. These facts prove that the great mass of business is done by persons using mass transportation.

If many of the thousands who now ride in automobiles would regularly use public transit, each of these persons would occupy only 70 square feet of street space instead of 500 square feet. The 430 square feet released per person would speed up considerably the entire traffic system. Then all people, including the automobilists who *need* to use their cars for daily travel, would get where they're going much faster. If off-street parking facilities were provided for the remaining motorists, additional street space—240 square feet per car—would be released. This would reduce still further the number of vehicles on the streets, and again accelerate the movement of the city's lifestream.

Retailers, property owners, transit and automobile riders—everybody benefits when people and goods can move swiftly and easily throughout your city streets. That's why you should support measures to free the streets where necessary for the faster movement of everyone. And that's why you should work closely with your transit company to obtain the best in urban transportation at lowest cost to riders and taxpayers.

Apparatus Dept., General Electric Company, Schenectady 5, N. Y.

GENERAL ELECTRIC

Have you seen

LIFESTREAM OF THE CITY

the new movie on urban transportation? Ask your G-E representative how you can arrange for a showing.

Traffic Control and Facilitation

Atlanta Adjusts to Traffic Demands

SINCE Atlanta, Ga., is a terminal area with its future prosperity depending on the successful integration of its various transportation facilities, sound organization of traffic is essential. A comprehensive survey of the city's problems was prepared for the State Highway Department of Georgia and the Public Roads Administration, Federal Works Agency, by H. W. Lochner & Company and De Leuw, Cather & Company. Recommendations include the construction of expressways, improvement of existing traffic facilities, provision of parking facilities, improvement of the transit system, and erection of a single union passenger station.

System of Expressways and Streets Planned

A system of expressways has been planned to follow closely the ideal routes of the major traffic flows as determined by the various studies. The core of the system would be a downtown connector extending around the north, east, and south sides of the downtown area. The estimated cost of the system is approximately $48,000,000.

While 60% of the traffic with downtown destinations would eventually use the expressways, there would continue to be many vehicles on the local streets, which are at present unsuited to the needs of modern automotive travel. A network of streets has been selected for gradual improvement through widening, elimination of jogs, separation of grades, and preferential treatment in traffic control in order to create an arterial street system. A one-way street system for the central business district has been prepared to simplify traffic movement, make full use of available roadways, and permit better timing of traffic control signals. The total cost of the major street improvements is somewhat less than $13,000,000.

Parking Facilities

After a survey of parking in the downtown area, it was recommended that the business of providing off-street parking remain a private enterprise. It may be necessary, however, to create a parking authority in order to acquire the necessary land and to finance physical improvements at low interest rates. All curb parking in the downtown area should be eliminated as rapidly as off-street facilities can be built. The area recommended for future development of additional parking facilities lies along the fringe of the area of most destinations in downtown Atlanta.

Improvements to City's Transit Service

Prior to the survey Atlanta had already begun to substitute motor or trolley coaches for streetcars. The Georgia Power Company, which is at present operating 113 trolley coaches over three main routes totaling 60.4 round trip miles, has launched a $5,000,000 transportation improvement program. Twenty streetcar lines and one main motor bus route will be changed over to trolley coach operation by the end of 1947.

After conversion to trolley coach service, the 21 new lines will cover 197 round trip miles, bringing the total to 257.4 round trip miles of trolley coach service. To operate the proposed lines, 260 new rubber-tired electrics will be purchased. Orders for them have been placed, and 150 are to have air-conditioning units. Of the rest, 70 are designed to permit later installation of air-conditioning units.

In order to expedite service, 16 turnback loops will be constructed at strategic points on several of the new trolley coach lines, and turnback loop construction will be used at the end of each line. Where conditions permit, pole brackets will be used for the construction. Several of the new lines will have express sidings or by-passes employing electric frogs with mechanical resets.

The proposed city-wide routings involve no drastic departures from the present system. A recommendation of major importance, however, is that a belt line of bus routes be established around and at a distance of one to two miles from the central business district to integrate the various radial routes.

The key to the downtown routing of buses is a proposed urban bus terminal situated above the railroad tracks south of Marietta Street between Forsyth and Broad Streets. Express buses should operate over all the proposed expressway routes to provide fast public transportation between the central business district and the various parts of the city and surrounding territory.

Railroad Terminal

Atlanta unfortunately has two railroad stations, requiring transfer of many passengers between them daily. Traffic to and from both stations must intermingle with the general confusion and congestion of the central business district.

A site for the proposed passenger terminal has been selected along the existing tracks of the Asheville, Chattanooga, and St. Louis Railway and the Southern Railway north of North Avenue and west of Marietta Street. A preliminary plan has been developed for this site, which appears to be ideal from the standpoint of accessibility to the various railroads, the ample space provided for traffic movements in and around the station, and the location with respect to major traffic generators in the city.

Boston Seeks Remedy for Traffic Problems

ALL ROADS lead to Boston and eventually all traffic jams up there," the Greater Boston Development Committee admitted ruefully, and set to work to untangle one of the worst traffic snarls in the country. As a remedy, a four-point program was recommended: It provides for off-street parking, a second vehicular tunnel, the central artery, and East Boston connections. Estimated cost of the undertaking is $75,000,000.

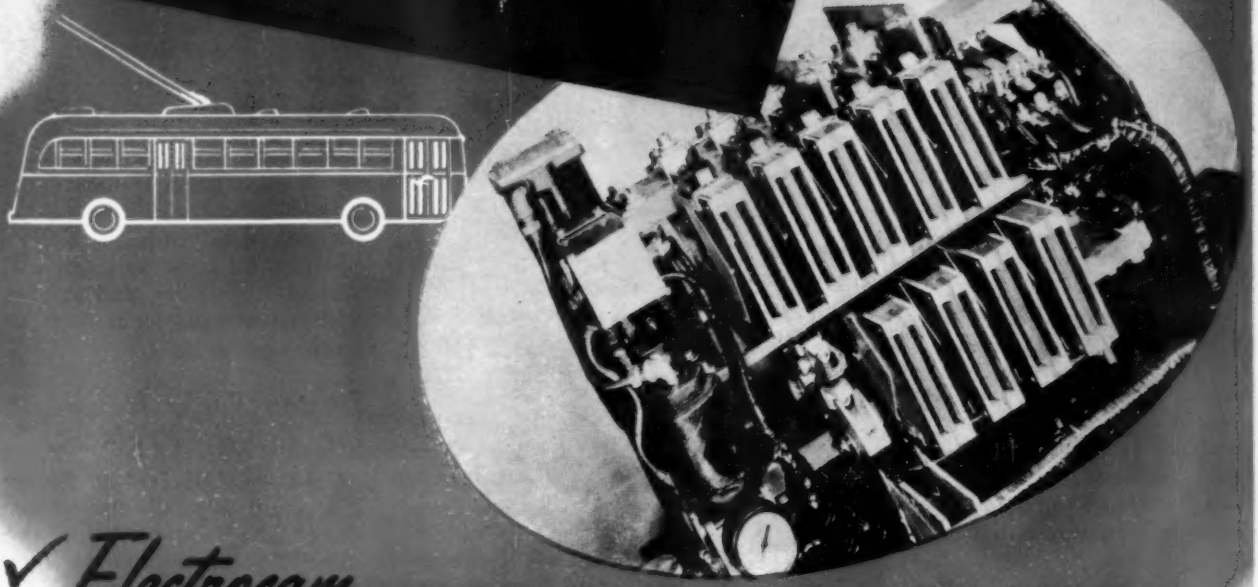
Off-street parking facilities for 3,000 vehicles would be conveniently located in the downtown section, and street parking regulations would be strictly enforced. A second vehicular tunnel to East Boston would accommodate airport and northbound traffic, which is expected to so increase within the next five years that a complete paralysis of surface traffic will be unavoidable without the tunnel.

The central artery would be a high-speed thoroughfare designed to serve all of downtown Boston and to connect north-south through routes. Highway connections with the Logan Airport and the McClellan Highway in East Boston would be necessary to make the tunnel function efficiently.

Immediate action is sought by the committee in order to realize the full benefits of the recommendations.

FOR BETTER TROLLEY COACH PERFORMANCE

SPECIFY *Electrocam Control*



✓ *Electrocam* IMPROVES BRAKE PERFORMANCE WITH EXTENDED DYNAMIC BRAKING

When a power shutoff is made on an *Electrocam*-equipped coach, passengers aren't jolted. For in shutting off power, the *Electrocam* controller follows the backward movement of the power pedal. This action inserts resistance before the line switch is opened . . . cushioning the shutoff.

The *Electrocam* is designed for dynamic braking . . . reducing brake block and brake drum maintenance 75 percent. Smooth dynamic braking takes over most of the work of the friction brake, from top speed to practically a standstill. The air brake is required to supplement the dynamic brake and complete the stop.

Power shutoff and dynamic braking are only two of the many operating features of the *Electrocam*. For full details, see your nearest Westinghouse representative, or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-15120

Electrocam Features:

- Permits simplified linkage
- Provides maximum accessibility
- Accelerates smoothly . . . instantly
- Maintains steady pace in traffic without shutoff
- Eliminates jolts and jars with cushioned power shutoff
- ✓ Improves brake performance with extended dynamic braking
- Removes source of line voltage leak by using low voltage control
- Makes contactor and limit relay parts interchangeable with our former standard equipment

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

ELECTRO-CAM

SERVING THE TRANSIT INDUSTRY

Tailoring Transit

By EARL E. KEARNS, Manager
Local Transit Division
General Electric Company
Erie, Pa.

A THOROUGH understanding of the part that organized transit can play in relieving transportation problems will help greatly in coping with them.

Each community must weigh its transportation requirements in the light of its own particular traffic conditions. For very heavy trunk surface lines requiring the handling of the heaviest street loads, the modern PCC car can most economically provide the service. Where rush-hour headways of 2 to 10 minutes on surface streets are required, or where passengers per hour at the peak points range from 400 to 2,000, the trolley coach can provide the most economical service. Trolley coach lines in central city areas can handle up to 10,000 passengers per hour.

Progressive transportation companies periodically make what they call and "origin and destination survey." This survey defines the quantity and character of service required in a particular locality and forms the pattern for laying out and re-routing individual lines. Then each line is studied in detail. For example, a typical medium heavy line running from a residential section into the city may have a maximum demand during the rush hour of 1,600 passengers. Even though this figure drops to 800 passengers per hour during the midday hours and to 400 passengers per hour in the evening and on Sunday, there must be a sufficient number of vehicles to meet the peak demand of 1,600. The data supplied by the origin and destination survey is important in developing a coordinated system of lines to handle the maximum demand for service (measured by the number of people who want to ride in the rush hours) most conveniently for the riding public and most economically for the transportation service.

Rochester Parking Meters

FOR the first five months of 1946, collections from parking meters in Rochester, N. Y., were $47,495, over half the total receipts for 1945. At the present rate, 1946 collections should be well over $100,000, city authorities point out. Receipts from the 1,855 Dual meters since their installation in 1942 follow: 1942 (operating part of the year), $66,166; 1943, $86,416; 1944, $90,017; 1945, $89,581.

Traffic Markings for Night Driving

Traffic markings with Prismo reflectorized paint in front of the Philadelphia Public Library. *(See pages 119 and 121 of* THE AMERICAN CITY *for July.)*

Progressive Public Transit Essential to Communities

By CHARLES E. EBERT, President
Philadelphia Transportation Company

TRANSIT HAS ONE need of first importance — the recognition by chambers of commerce, merchants, government agencies, and the public that sound and progressive transit is a requisite for prosperous communities. If this need is satisfied, all others will be taken care of and communities will receive the full benefit of the industry.

The major problem of congestion arises from the fact that there are too many vehicles on streets which were designed for the horse-and-buggy days. Modern highway construction and traffic engineering will accomplish much in many sections of the country, but street widening in central city areas cannot be undertaken except at virtually prohibitive cost and effort. City streets do not now have, and cannot be made to have, the capacity for everyone to travel in private vehicles.

Much of our thinking and talking is about moving vehicles rather than people. Transit is an efficient user of street space because it moves people. The average citizen, traveling in a street car or bus, uses only 70 sq. ft. of street space, while as an automobile rider, he requires 500 sq. ft.—7 times as much.

Public transit uses street space economically. Provision for public transit facilities in city planning programs offers a practical, low-cost method of relieving traffic congestion.

Each city and town has its own special problems. All of the men of the transit industry, operators and manufacturers, are working to augment the attractiveness and comfort of the service. This means new and modern cars and coaches, better operating methods, and courteous, sales-minded employes.

In your own community there are men in the transit field who are well aware of the importance of their service. They know that a well-rounded, prosperous community life depends on efficient transit, and they are anxious to work with you on plans for the betterment of your city and its people. The industry is ready and willing to aid in resolving the problems of the modern city. But to make its best contribution, it must have public understanding and a part in planning.

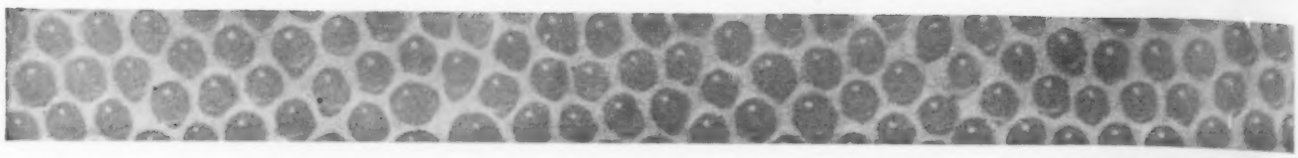
Parking Lots for Mineola

IN THE master plan formulated by the Planning Board of Mineola, L. I., population 10,000, recommendations are made for the improvement of the parking situation by means of free municipal parking lots, possibly supplemented by parking meters along the curbs in the business center. Five sites have been designated.

The lots should provide about 1,000 car berths, of which at least 200 should be set aside for railroad commuters. It has been suggested that the lots be financed by a bond issue.

Recommendations have also been made to provide main traffic streets about one-half mile apart so that traffic will follow certain well-defined routes and leave the residential streets comparatively quiet. Harold M. Lewis was consulting engineer.

3 STEPS *to* SAFETY!



The above is a microphotograph of a Prismo process sign showing the glass spheres embedded in the semi-plastic pigmented binder.

1 THE PRISMO PROCESS

It's a unique method by which modern signs can be made visible at night. The patented Prismo Process incorporates the use of thousands of microscopic, crystal-clear, glass spheres embedded in a pigmented binder. The exposed portions of the spheres act as thousands of tiny lenses in returning light to its source so that the Prismo Processed Sign glows legibly at night to oncoming motorists.

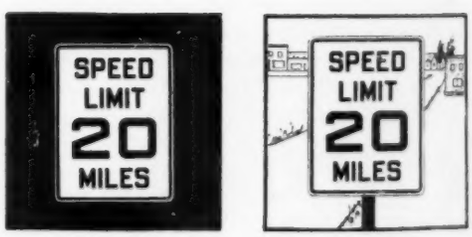
2 THE PRISMO SIGN KIT

To make effective Prismo Signs, here is a complete reflectorizing Sign Kit. It includes a long-lasting sign binder—(for brush, spray or screening)—binder solvent—and meticulously graded Prismo Sign Spheres. Its cost is low—its application easy and permanent—and it can be secured in reflective white, yellow, red, green and other attractive colors. Write for Bulletin 244. Immediate deliveries on all Prismo Sign Kits.

3 PRISMO TRAFFIC SIGNS

The finished product is the Prismo Sign, keeping traffic informed during every hour of the day. They require no maintenance, and thousands of Prismo Signs are guiding traffic after eight years of continuous service. You must see PRISMO to see the most economical and efficient of modern traffic signs.

Factory-made Prismo Signs are available for those desiring ready-to-install signs. Your Prismo distributor can give you full details or write to:



NIGHT and DAY

PRISMO SAFETY CORPORATION

Municipal Division

HUNTINGDON, PENNSYLVANIA

Parking Areas for Traffic Generators

By NATHAN CHERNIACK, Economist
The Port of New York Authority

THE parking problem is created, maintained, and intensified by traffic "generators" — buildings which attract masses of people in automobiles and large quantities of goods in trucks without providing offstreet storage for autos and trucks. If cities are ever to solve the problem they must make property developers responsible for adequate provision of off-street auto parking space and off-street truck-loading platform spaces in new buildings which are inherently traffic generators.

Every city of any size should place an ordinance on its statute books to prevent the future aggravation of the parking problem as a result of new buildings. Parking and loading spaces need not be provided free by property owners. Tenants of these buildings might be required to pay for such space in their rent. The space might be on adjacent property; in any event, it would be available in new or altered buildings.

Requirements for parking spaces for different types of buildings need further study to provide reasonable yardsticks. Some yardsticks have already been developed. In 1940, for example, New York City passed a revised zoning resolution requiring off-street loading space in new buildings to be used for manufacturing, storage or goods display; in department stores; and in hospitals at a rate of one truck-loading berth for each 25,000 sq. ft. of aggregate floor area. Existing buildings not now used for such purposes may not be so used in the future unless loading space is provided. The Regional Plan Association of New York has proposed a more liberal sliding scale whereby additional off-street truck berths would take care of increasing gross floor areas, and office buildings and hotels would not need to have as many truck berths as the present law demands.

If such a parking and loading space ordinance for new buildings is found to be successful, cities should take the second step—an ordinance requiring owners of *existing* property to provide reasonable auto parking and truck loading spaces within a period of 5 to 10 years after the adoption of the ordinance.

Where hardship cases develop, cities might give relief in several ways: by permitting such parking spaces to be located within certain maximum distances from existing properties, by planning for property owners block or community parking spaces and truck-loading platforms, or, through enabling legislation, by utilizing their right of eminent domain to acquire properties and resell them to property owners so that the requirements of the ordinance could be met.

As a result of the second ordinance, another mass addition to the supply of the offstreet parking space would be made.

The city itself then should cease to be a major offender and should provide adequate off-street parking and truck-loading spaces for civic buildings.

The 2 parking ordinances would provide ample space for parking in the business areas and thus tend to avoid decentralization.

Uniform Laws Division

TO SUPPORT the recommendation of the President's Highway Safety Conference that all states and municipalities adopt the standards set forth in the Uniform Vehicle Code and the Model Traffic Ordinance, a Uniform Laws Division has been established within the Automotive Safety Foundation organization, President Pyke Johnson reports.

The Division will develop information and materials and make available on request staff advisory and consulting services. The work will include studies comparing state laws and city ordinances with recognized uniform codes. Also included will be comparison of present administrative procedures in the motor vehicle field with nationally recommended practices. Pending legislation will also be analyzed to determine its degree of compliance with the Uniform Vehicle Code and the Model Traffic Ordinance.

Causes of Pedestrian Deaths

To make IBM workers aware of dangerous pedestrian habits, the firm ran the "graphichart" below as a paid advertisement in the Binghamton, Endicott, and Poughkeepsie, N. Y., papers. The Chicago Sun *prepared the material.*

In United States from Pearl Harbor to V-J Day
TRAFFIC ACCIDENTS KILLED 94,000 INJURED 3,300,000
(INJURIES OF ALL TYPES)
WALKING BEHIND OR IN FRONT OF BUS OR STREET CAR AFTER ALIGHTING
STEPPING OUT BETWEEN PARKED CARS
MAKING SUDDEN DASH INTO STREET
STANDING OUTSIDE SAFETY ISLAND
NOT CROSSING AT INTER-SECTION
CROSSING AGAINST RED LIGHTS
ALSO CAUSING ACCIDENTS— WEARING DARK CLOTHES AT NIGHT OR OBSCURING ONE'S VIEW WITH UMBRELLA
READING NEWSPAPER WHILE CROSSING STREET
LEAVING CURB WITHOUT LOOKING IN BOTH DIRECTIONS
NOT ALERT WHILE CROSSING STREET

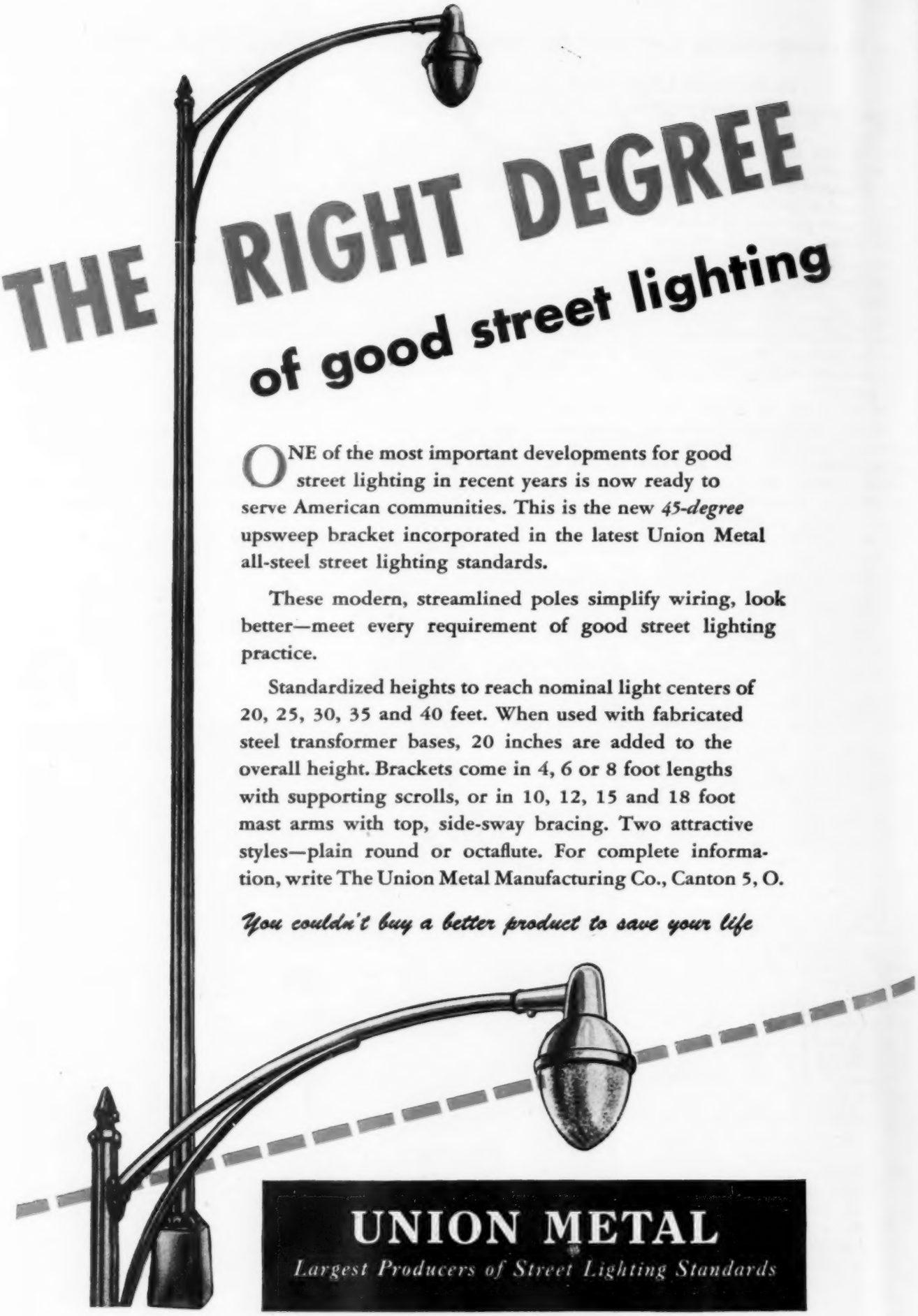
THE RIGHT DEGREE
of good street lighting

ONE of the most important developments for good street lighting in recent years is now ready to serve American communities. This is the new *45-degree* upsweep bracket incorporated in the latest Union Metal all-steel street lighting standards.

These modern, streamlined poles simplify wiring, look better—meet every requirement of good street lighting practice.

Standardized heights to reach nominal light centers of 20, 25, 30, 35 and 40 feet. When used with fabricated steel transformer bases, 20 inches are added to the overall height. Brackets come in 4, 6 or 8 foot lengths with supporting scrolls, or in 10, 12, 15 and 18 foot mast arms with top, side-sway bracing. Two attractive styles—plain round or octaflute. For complete information, write The Union Metal Manufacturing Co., Canton 5, O.

You couldn't buy a better product to save your life



UNION METAL

Largest Producers of Street Lighting Standards

Outdoor Lighting

Brightening Outlook for Street Lighting

By KIRK M. REID and R. J. DUFENTHALER
General Electric Company
Lamp Department
Engineering Division
Nela Park, Cleveland, Ohio

IN THE pre-war decade of 1932 to 1942, street lighting suffered from lack of attention, first, from the public. Even those citizens who knew something of the value of good lighting seldom voiced their interest.

Second, street lighting lacked proper attention from public officials. However, if the public did not seem to be particularly interested, officials cannot be censured.

And, with only occasional evidence of interest on the part of citizens and public officials, many utilities made no aggressive attempts to develop street-lighting programs which would fulfill the opportunities for a substantial increase in public safety. The result is that only a small proportion of our installations of street lighting can be held up as examples of efficient and effective practice.

Recent Trends

Now, however, the public is showing more interest in street lighting than ever before. This is particularly true in the coastal areas where the dimout took its toll. Civic organizations such as the Junior Chamber of Commerce have found that they can get city officials to take action on street lighting.

As for public officials, the all-important fact is that many comprehensive plans for street lighting improvement are actively under way and cash reserves are being set up for that purpose. The total already runs into many millions.

Utilities, too, are cooperating fully in plans for improvements.

New Luminaires Developed for Various Street Types

Meanwhile, manufacturers have been active in development of new luminaires needed to fill out a complete line of modern, effective types for streets of the various classifications. In the new lighting projects, then, what luminaires will be used? On *arterial* and *business* streets, the types of luminaires which represented the best modern practice before the war will continue to represent the best modern practice. Here are samples (see accompanying illustration):

1. On *heavy traffic arteries* and *wide business streets* the large reflector-deflector pendant units—General Electric Forms 81 and 101—with 15,000-lumen and 10,000-lumen lamps. These are normally used with internal deflectors to direct more light to the pavement. They can be used without the deflectors where business establishments line the artery and it is desirable to have more light on the wide sidewalks and building fronts.

2. On *light* and *medium traffic arteries* and *smaller business streets* the small reflector-refractor type of unit—Form 79R—usually with 10,000-lumen, 6,000-lumen, or 4,000-lumen lamps. The globes on these units are designed to utilize the prismatic refraction of light control, and they represent an important improvement in light control in street lighting units. The improved utilization efficiency and light distribution of these units offers a marked increase in visibility per dollar of total lighting cost.

3. The small reflector-deflector type of units with 10,000-lumen, 6,000-lumen, or 4,000-lumen lamps are also available for the types of streets on which the small reflector-refractor units are used. These units, particularly if installed with a long globe, are somewhat more attractive but have a slightly lower utilization efficiency.

Three New Forms for Local Traffic Residential Streets

For the *local traffic residential streets* there are three new types of luminaires:

1. The new suburban open reflector—Form 79SO—is an open luminaire in the same price range as the radial wave. This unit increases the visibility on the street about 2½ times over that provided by radial wave reflectors. It can be equipped with shields to keep direct light off the houses. Most effective results are obtained with spacing-mounting height ratios of the order of 6:1 to 8:1.

Modern street lighting on Nott Terrace, Schenectady, N. Y.

Making street lighting dollars . . *go farther.*

in rural and suburban Communities

The citizens of *any* community—whether its population is 100 or 100,000—are entitled to the greater comfort and safety provided by good street lighting.

To meet the need for a low-cost, high-efficiency unit, Westinghouse presents the new OV-18 Open-type Reflector. It is adaptable to practically any type of mounting, and is designed as part of a standardized system that later may be economically converted to a system requiring larger lamps.

For further information on features and application, write for product descriptive folder B-3716. Westinghouse Electric Corp., P.O. Box 868, Pittsburgh 30, Pa.

J-04098

WESTINGHOUSE TYPE OV-18 REFLECTOR

50% MORE CANDLE POWER

is directed up and down the street by the oval-shaped reflector than by the conventional radial wave reflector. Major portion of light is directed out at approximately 5° from the curb line.

LAMP SHIELDED TO PREVENT GLARE

. . . unit is designed so that the bottom of the lamp filament is ¾ of an inch above lower edge of reflector rim. This minimizes direct glare in motorists' normal line of vision and protects adjacent property from objectionable glare.

Available with Universal Metal Head for side or top mounting.

Paraboloidal reflecting surface directs more light up and down the street.

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

PLANNED LIGHTING

AVAILABLE THROUGH 127 WESTINGHOUSE ELECTRIC SUPPLY OFFICES AND INDEPENDENT JOBBERS

2. The new suburban enclosed luminaire—Form 79CR—has a light distribution similar to the suburban open reflector, but with maximum candlepower at a slightly higher angle. It is recommended where a more decorative luminaire is desired, usually at spacing-mounting height ratios of the order of 8:1 to 12:1.

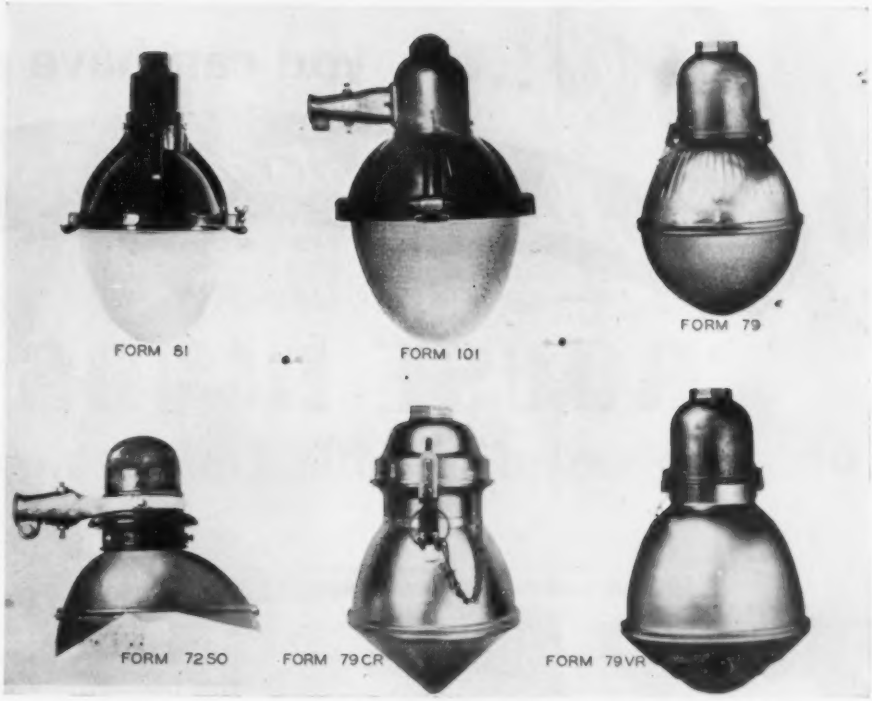
Both of these units are most effective when equipped with a newly designed 2,500-lumen lamp which has a PS-25 bulb and a 5⅜-in. light center length.

3. On many local traffic residential streets spacing-mounting height ratios greater than 8:1 are very desirable to fit into block lengths or practices in pole spacing. Comprehensive studies were completed just before the war on a new luminaire designed for spacing-mounting height ratios of 10:1 to 12:1. This unit is known as the Form 79VR for 6,000-lumen and 4,000-lumen lamps. The refractor bowl in this unit limits the amount of light delivered beyond the sidewalks and directs a substantial portion of light at wide angles lengthwise along the street. This means high utilization efficiency. It also means some increase in glare. But on local traffic streets for which this luminaire was designed, there are seldom more than two or three units in the field of view. Street Lighting Evaluator measurements show that under these conditions this development represents a radical advance in lighting effectiveness over any former practice. This particular model provides a two-way distribution of light.

There is increasing interest in mercury lamps as illuminants for street lighting. Some new installations using the 400-watt mercury lamp in both the large and the small reflector-deflector types of units are giving very satisfactory results.

New Sports Floodlight

Larry MacPhail (left) with artist's sketch of Yankee Stadium under the new General Electric sports floodlights. R. J. Swackhamer, G-E engineer, stands behind one of the new floodlights.



Modern luminaires for effective and economical street lighting. In the top row are three types designed for business and arterial streets. The bottom row shows three types for residential and local traffic streets.

An Inexpensive Way to Save Lives

By G. K. HARDACRE
President-Elect
Illuminating Engineering Society*

MOST serious night accidents occur on a comparatively small portion of the streets and a still smaller portion of the highways. As was brought out in connection with President Truman's Highway Safety Conference, "about half of the city fatalities occur on approximately 10% of the city streets—the main thoroughfares."

The Illuminating Engineering Society's report to the Conference emphasized the fact that most of the highway fatalities occur in localized sections—less than 4% of the highways, the danger spots being approaches to big cities, traffic arteries running through villages or through built-up sections between cities, and hazardous locations with heavy night traffic.

Adequate illumination of these fatal 30,000 miles of streets and 20,000 miles of highways should result in an annual saving of 6,000 lives, 200,000 personal injuries, 900,000 cases of property damage, and $250,000,000 in direct loss, according to Illuminating Engineering Society estimates. Not only is such lighting relatively small in cost, but also it is matched by reduction of economic loss and lower insurance premiums.

Traffic safety studies showed lighting to be "the most effective remedy for serious night accidents with a relatively small initial cost. In no other way can so large a reduction in night accidents be accomplished for so little."

The members of the Illuminating Engineering Society's Street and Highway Lighting Committee have long been convinced that the elimination of lighting inadequacies will reduce street and highway tragedies and contribute

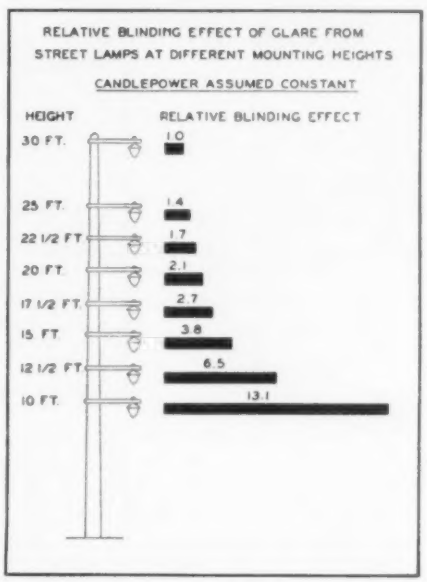
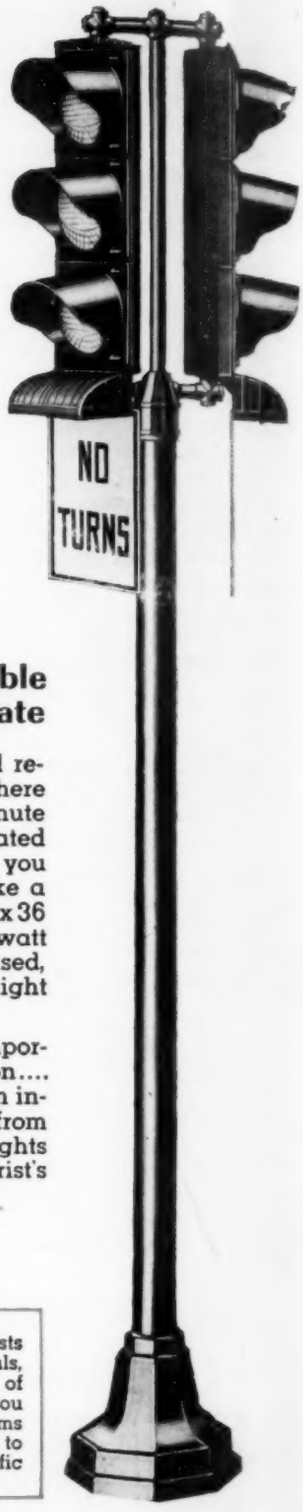
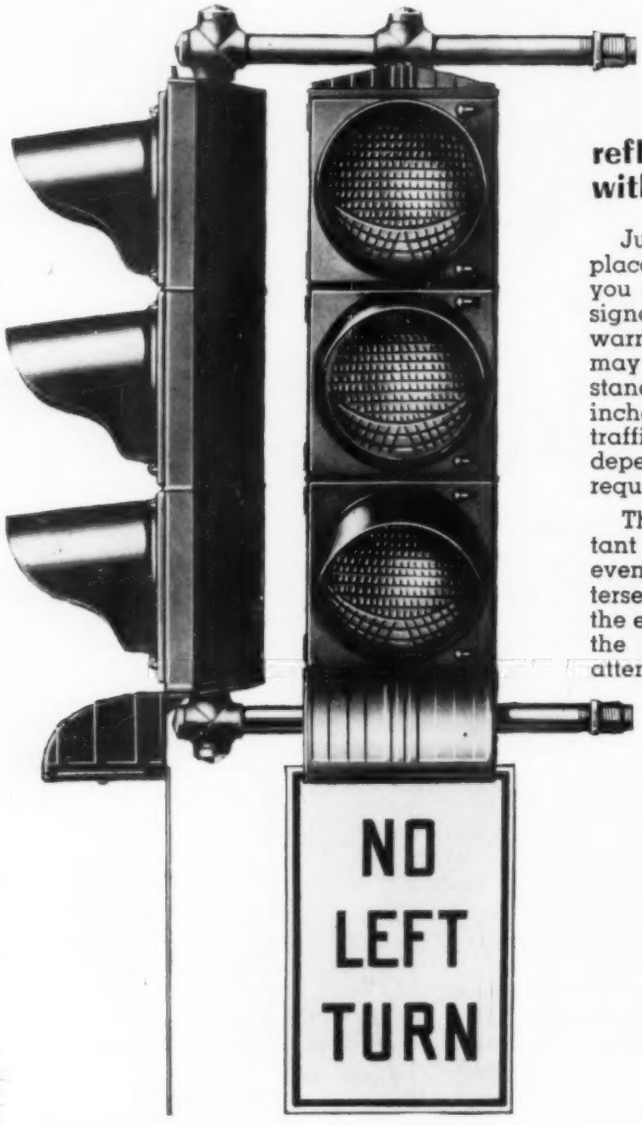


Chart from I.E.S. Code shows glare effect at various mounting heights.

* Mr. Hardacre is manager of commercial sales for the Public Service Company of Northern Illinois, Chicago.

Now..... you can have an illuminated sign on any CROUSE-HINDS one-way or adjustable traffic signal.





This NEW base light reflector is interchangeable with the regular end plate

Just remove the end plate and replace it with the base light and there you are ... with an up-to-the-minute signal that can carry any illuminated warning or information sign that you may desire. The base will take a standard sign 12 x 18, 18 x 24 or 24 x 36 inches. Either one or two 60-watt traffic signal lamps may be used, depending upon the amount of light required.

This illuminated sign is an important safety measure in any location.... even at brightly lighted downtown intersections where the extra light from the efficient base reflector, high lights the sign and attracts the motorist's attention.

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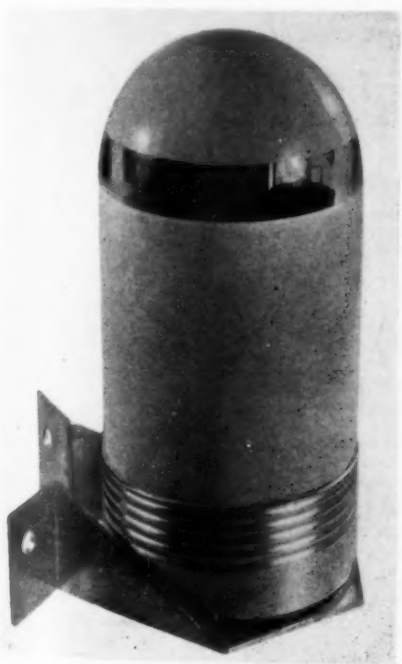
to the efficient movement of traffic and to the elimination of much crime.

Firm in this conviction, the committee brought forth its new "Recommended Practice of Street and Highway Lighting" in February 1946. This publication has been in such demand that by July it was in its second large printing.

For many years the Society has recognized the need for a basic, complete, and authoritative lighting reference guide. Up to the present, however, no attempt has been made to coordinate all available information in one complete reference guide that will give municipal engineers, architects, designers, and others interested in planning, installing, operating, and manufacturing lighting systems and equipment the basic lighting guidance they need.

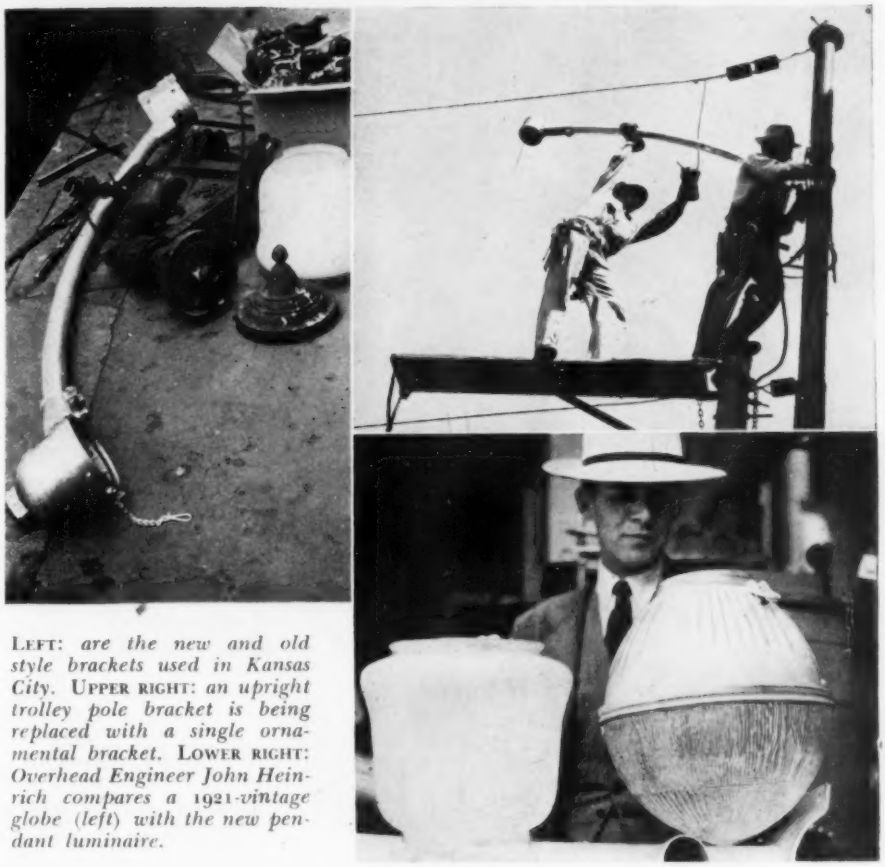
The Lighting Handbook is now being prepared by the Society for just this purpose. It is the aim of the book to become as nearly as possible the standard, accepted reference work for the entire lighting profession and industry and for others concerned with all types of lighting improvements. In addition to setting forth principles, nomenclature, and the design and application of interior lighting, the Handbook will give ample consideration to the lighting of parks, fairs, recreational areas, sports fields, streets, highways, tunnels, bridges, and airports. It is scheduled to be released in October 1947.

Lighting Control Unit



Fisher-Pierce photoelectric control unit for turning on and off individual street lights on multiple circuit. *(See* THE AMERICAN CITY *for July, page 117.)*

Kansas City Starts Work on Safety Lighting Program



LEFT: *are the new and old style brackets used in Kansas City.* UPPER RIGHT: *an upright trolley pole bracket is being replaced with a single ornamental bracket.* LOWER RIGHT: *Overhead Engineer John Heinrich compares a 1921-vintage globe (left) with the new pendant luminaire.*

CONSTRUCTION is now under way on the five-year traffic safety lighting program for Kansas City, Mo., which was described in the April issue of THE AMERICAN CITY (pages 135-137) by T. J. Seburn, city traffic engineer.

The Kansas City Power and Light Company, owner and operator of the street lights for the city on a contract basis, has already ordered 1,500 General Electric luminaires and 1,000 Union Metal brackets for the relighting program.

In the course of the program a total of slightly over 15,000 electric and gas lights will be replaced with approximately 13,500 electric lights. Where 250-candlepower lights are in use, nothing less than 400-candlepower and many of the 1,000- and 1,500-candlepower sizes will be used. The 11,500,000 effective lumens of light now being delivered to the streets of Kansas City at a total cost of $552,000 per year, or $47.53 per thousand effective lumens, will be stepped up to 49,000,000 effective lumens costing $722,000 per year, or $14.75 per thousand effective lumens.

The Kansas City program is based upon the recommended practice of the Illuminating Engineering Society. It is anticipated that the modern lighting system will help reduce night traffic accidents without speed reduction, provide greater protection and convenience to pedestrians, stimulate retail trade, aid police in combatting various forms of crime, and generally add to the attractiveness of the city.

Poor Lighting Called Major Cause of Accidents

A MAJOR cause of traffic accidents in Roselle, N. J., population 13,542, is improper and insufficient street lighting, a recently completed survey revealed. Police Chief Iver J. Petersen, whose department conducted the five-year traffic accident survey, has recommended that street lights be of required brillance, staggered regularly throughout the length of each thoroughfare.

In 80% of the fatalities recorded in Roselle, pedestrians abroad at night were the victims.

Other causes of accidents were obstruction of vision at intersections, disregard for signals, and speeding.

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Park-O-Meters are the most modern, wholly automatic meters ever designed. That's why people in every city express a preference for them. They are absolutely accurate in time allowance and they are sturdy and durable, too. Compare them with any other type of meter . . . remember that, because Park-O-Meters are simple to use, you need no period of "educating the public" . . . everybody knows how to use a coin-slot. Then, when meters are to be installed in your city *insist on the wholly automatic PARK-O-METERS.*

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Conventions—When and Where

Conventions listed this month for the first time are indicated by an asterick (*)

Sept. 16-18—Chicago, Ill.
AMERICAN TRANSIT ASSOCIATION. Annual Meeting (Palmer House). Gen. Sec., Guy C. Hecker, American Transit Association, 292 Madison Ave., New York, N. Y.

Sept. 16-18—Wichita, Kans.
LEAGUE OF KANSAS MUNICIPALITIES. Annual Convention (Broadview Hotel). Exec. Dir., John G. Stutz, Capitol Federal Bldg., Topeka.

Sept. 16-18—Atlanta, Ga.
GEORGIA WATER AND SEWAGE ASSOCIATION. Annual Water and Sewage School (Georgia School of Technology). Sec., V. P. Enloe, RFD 5, Box 363, Atlanta, Ga.

Sept. 16-19—San Diego, Calif.
LEAGUE OF CALIFORNIA CITIES. Annual Conference (Hotel U. S. Grant). Exec. Sec., Richard Graves, Hotel Senator, Sacramento.

Sept. 16-20—Poland Spring, Me.
NEW ENGLAND WATER WORKS ASSOCIATION. Annual Convention (Poland Spring House). Sec., Walter Conroy, 613 Statler Bldg., Boston, Mass.

Sept. 18-20—Traverse City, Mich.
AMERICAN WATER WORKS ASSOCIATION—MICHIGAN SECTION. Annual Meeting (Hotel Park Place). Sec.-Treas., Raymond J. Faust, Division of Water Supply, Bureau of Engineering, State Department of Health, Lansing, Mich.

Sept. 18-21—Quebec, Canada
ILLUMINATING ENGINEERING SOCIETY. Annual Convention (Hotel Frontenac). Exec. Sec., A. D. Hinckley, 51 Madison Ave., New York.

Sept. 19—Dickinson, N. D.
LEAGUE OF NORTH DAKOTA MUNICIPALITIES. Annual Convention. Exec. Sec., Myron H. Atkinson, City Auditor, Bismarck, N. D.

Sept. 20-21—Deadwood, S. D.
SOUTH DAKOTA WATER AND SEWAGE WORKS CONFERENCE. Annual Meeting. Dir., W. W. Towne, Division of Sanitary Engineering, State Board of Health, Pierre, S. D.

Sept. 22-24—Virginia Beach, Va.
LEAGUE OF VIRGINIA MUNICIPALITIES. Annual Meeting (Hotel Cavalier). Sec., Harold I. Baumes, 902 Travelers Bldg., Richmond, Va.

Sept. 22-25—Fort Worth, Texas
AMERICAN PUBLIC WORKS ASSOCIATION. Public Works Congress (Hotel Texas). Exec. Dir., Norman Hebden, 1313 E. 60 St., Chicago, Ill.

Sept. 23-27—Mexico City, Mexico
INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE. Annual Conference (Palace of Fine Arts). Exec. Sec., Edward J. Kelly, 918 F St., NW, Washington, D. C.

Sept. 24-26—New Castle, Pa.
PENNSYLVANIA STATE ASSOCIATION OF COUNTY COMMISSIONERS. Annual Convention (The Castleton Hotel). Sec.-Treas., Herbert S. Bolger, Court House, Hollidaysburg, Pa.

Sept. 24-27—Boston, Mass.
NATIONAL ASSOCIATION OF ASSESSING OFFICERS. National Conference on Assessment Administration (Hotel Statler). Exec. Dir., Albert W. Noonan, 1313 E. 60 St., Chicago.

Sept. 25-27—Elmira, N. Y.
MUNICIPAL ELECTRIC UTILITIES ASSOCIATION OF NEW YORK STATE. Annual Conference (Mark Twain Hotel). Sec., T. J. McKee, 200-212 East Third St., Jamestown, N. Y.

Sept. 26-27—Mandan, N. D.
NORTH DAKOTA WATER AND SEWAGE WORKS CONFERENCE. Annual Convention (Hotel Lewis & Clark). Sec.-Treas., K. C. Lauster, c/o State Department of Health, Bismarck, N. D.

Sept. 26-28—Harrisburg, Pa.
PENNSYLVANIA LEAGUE OF THIRD CLASS CITIES. Annual Convention (Penn Harris Hotel). Pres., Walter Greenwood, 320 Municipal Bldg., Harrisburg, Pa.

Sept. 27-28—Lancaster, Pa.
AMERICAN WATER WORKS ASSOCIATION—FOUR STATES SECTION. Annual Meeting (Hotel Brunswick). Sec.-Treas., H. Lloyd Nelson, 1624 Lincoln-Liberty Bldg., Philadelphia.

***Sept. 30-Oct. 3—Memphis, Tenn.**
BUILDING OFFICIALS' CONFERENCE OF AMERICA. Annual Convention. Sec-Treas., Arthur N. Rutherford, Building Inspector, West Hartford, Conn.

Sept. 30-Oct. 2—Springfield, Ill.
ILLINOIS MUNICIPAL LEAGUE. Annual Convention (Hotel Leland). Exec. Sec., A. L. Sargent, Illinois Municipal League, 537 So. Fourth St., Springfield, Ill.

Oct. 2-3—Mammoth Cave, Ky.
KENTUCKY MUNICIPAL LEAGUE. Annual Convention (Mammoth Cave Hotel). Exec. Sec., Carl B. Wachs, c/o Univ. of Kentucky, Lexington, Ky.

Oct. 2-3—Milwaukee, Wis.
WISCONSIN CHIEFS OF POLICE ASSOCIATION. Annual Conference (Hotel Schroeder). Sec., Walter H. Wagner, Sheboygan, Wis.

Oct. 3-4—Albany, N. Y.
AMERICAN WATER WORKS ASSOCIATION—NEW YORK SECTION. Fall Meeting (Hotel DeWitt Clinton). Sec.-Treas., R. K. Blanchard, 50 W. 50 St., New York, N. Y.

Oct. 3-5—Columbus, Ohio
INSTITUTE OF TRAFFIC ENGINEERS. Annual Meeting (Hotel Deshler-Wallick). Sec.-Treas., Wilbur S. Smith, Strathcona Hall, New Haven 11, Conn.

***Oct. 6-8—Chanute, Kans.**
KANSAS ASSOCIATION OF MUNICIPAL UTILITIES. Annual Meeting (City Memorial Bldg.). Sec.-Treas., Edgar P. Showalter, Board of Public Utilities, Kansas City 16, Kans.

Oct. 7-9—Toronto Ont.
CANADIAN INSTITUTE OF SEWAGE AND SANITATION. Annual Meeting (Hotel Royal York). Sec.-Treas., Dr. A. E. Berry, Canadian Institute of Sewage and Sanitation, Parliament Bldg., Toronto, Ont.

Oct. 7-9—Toronto, Ont.
FEDERATION OF SEWAGE WORKS ASSOCIATION. Annual Meeting (Hotel Royal York). Sec., W. H. WISELY, 325-26 Illinois Bldg., Champaign, Ill.

Oct. 7-11—Chicago, Ill.
NATIONAL SAFETY COUNCIL. Congress and Exposition (Hotel Stevens). Pres., Ned H. Dearborn, 20 North Wacker Dr., Chicago.

Oct. 7-12—Hastings, Sussex, England
INTERNATIONAL FEDERATION FOR HOUSING AND TOWN PLANNING. International Congress and Exihibition. Congress Officer, 13 Suffolk St. London, S.W.I.

Oct. 10-12—Cleveland, Ohio
NATIONAL ASSOCIATION OF HOUSING OFFICIALS. Annual Meeting (Hotel Carter). National Association of Housing Officials, 1313 E. 60 St., Chicago, Ill.

Oct. 10-12—Columbus, Ohio
AMERICAN WATER WORKS ASSOCIATION—OHIO SECTION. Annual Conference (Hotel Fort Hayes). Sec.-Treas., F. P. Fischer, Wallace & Tiernan, 811 Perry Payne Bldg., Cleveland.

Oct. 10-12—Detroit, Mich.
MICHIGAN MUNICIPAL LEAGUE. Annual Meeting (Hotel Fort Shelby). Dir., John H. Huss, 205 South State St., Ann Arbor.

Oct. 14-17—Galveston, Texas
AMERICAN WATER WORKS ASSOCIATION—SOUTHWEST SECTION. Annual Meeting (Buccaneer Hotel). Sec., L. A. Jackson, Mgr., Water Works, Little Rock, Ark.

Oct. 16-18—Omaha, Nebr.
LEAGUE OF NEBRASKA MUNICIPALITIES. Annual Convention (Hotel Rome). Sec.-Treas., C. E. Beals, 408 Continental Bank Bldg., Lincoln, Nebr.

Oct. 16-18—Atlantic City, N. J.
PENNSYLVANIA WATER WORKS ASSOCIATION. Annual Convention (Hotel Traymore). Sec.-Treas., E. R. Hannum, 510 Telegraph Bldg., Harrisburg, Pa.

***Oct. 16-18—Portland, Ore.**
LEAGUE OF OREGON CITIES AND OREGON FINANCE OFFICERS' ASSOCIATION. Annual Meeting (Multnomah Hotel). Exec. Sec., Herman Kehrli, Bureau of Municipal Research, University of Oregon, Eugene.

***Oct. 17—Boston, Mass.**
AMERICAN WATER WORKS ASSOCIATION—NEW ENGLAND SECTION. Annual Meeting (Parker House.) Sec., R. H. Ellis, Associated Factory Mutual Fire Insurance Companies, 184 High St., Boston 10, Mass.

Oct. 17-18—Fond du Lac, Wis.
LEAGUE OF WISCONSIN MUNICIPALITIES. Annual Convention (Hotel Retlaw). Sec., Frederick MacMillin, 30 E. Johnson St., Madison, Wis.

Oct. 17-18—Morgantown, West Va.
AMERICAN WATER WORKS ASSOCIATION—WEST VIRGINIA SECTION. Annual Convention (Hotel Morgan). Sec., J. B. Harrington, State Department of Health, Charleston 5, W. Va.

Oct. 17-19—Rockford, Ill.
ILLINOIS ASSOCIATION OF PARK DISTRICTS. Annual Convention (Hotel Faust). Exec. Dir., Miss Marjorie Dickinson, 621 E. Capitol St.,

***Oct. 19-21—Fontana Village, N. C.**
AMERICAN INSTITUTE OF PLANNERS. Fall Conference. Roland B. Greeley, American Institute of Planners, 77 Massachusetts Ave., Cambridge 39, Mass.

Oct. 21-22—Columbia, Mo.
MISSOURI WATER AND SEWERAGE CONFERENCE. Annual Meeting (Daniel Boone Hotel). Sec.-Treas., W. A. Kramer, State Board of Health,

Oct. 21-24—New York, N. Y.
CIVIL SERVICE ASSEMBLY OF THE UNITED STATES AND CANADA. Annual Conference on Public Personnel Administration (Hotel New Yorker). Acting Dir., J. J. Donovan, 1313 E. 60 St., Chicago, Ill.

Oct. 23-25—San Francisco, Calif.
AMERICAN WATER WORKS ASSOCIATION—CALIFORNIA SECTION. Annual Conference (Hotel Whitcomb). Sec., Ray L. Derby, Room 1028, 316 W. Second St., Los Angeles, Calif.

***Oct. 24-25—Huntington, W. Va.**
AMERICAN WATER WORKS ASSOCIATION—WEST VIRGINIA SECTION. Annual Meeting (Hotel Pritchard). Sec., J. B. Harrington, State Dept. of Health, Charleston 5, W. Va.

***Oct. 26—Worcester, Mass.**
MASSACHUSETTS FEDERATION OF PLANNING BOARDS. Annual Meeting. Miss M. T. Downey, Clerk, 43 City Hall, Boston, Mass.

Oct. 27-30—Miami, Fla.
NATIONAL ASSOCIATION OF COMMERCIAL ORGANIZATION SECRETARIES. Annual Meeting (Hotels McAllister, Columbus, Colonial, Everglades, and Alcazar). Exec. Sec.-Treas., Miss Elizabeth Glenn, 1616 H St., NW, Washington.

***Oct. 28-30—Knoxville, Tenn.**
AMERICAN WATER WORKS ASSOCIATION—KENTUCKY, TENNESSEE SECTION. Annual Meeting (Andrew Johnson Hotel). Sec., R. P. Farrell, 420 Sixth Ave. N., Nashville, Tenn.

Oct. 28-30—Pittsburgh, Pa.
ENGINEERS SOCIETY OF WESTERN PENNSYLVANIA. Annual Water Conference (Hotel William Penn). Conference Chairman H. M. Olson, Hotel William Penn, Pittsburgh, Pa.

(Concluded on page 157)

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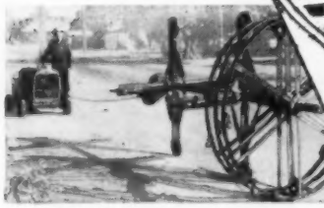

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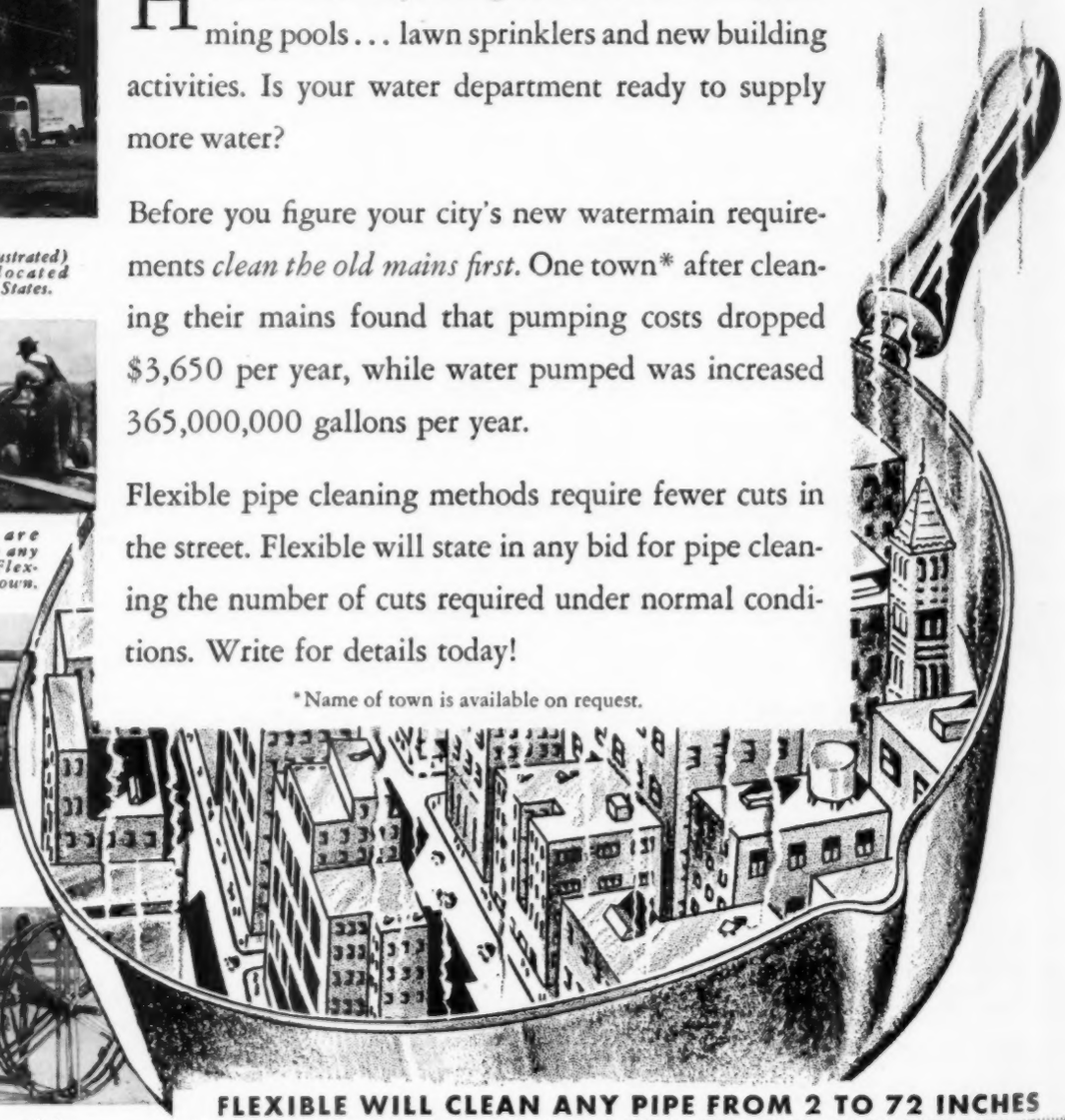

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401 Broadway, New York 13.
29 Cerdan Ave., Roslindale 31, Mass.

Conventions—When and Where

(*Continued from page* 155)

*Nov. 4-6—Des Moines, Iowa
AMERICAN WATER WORKS ASSOCIATION—IOWA SECTION. Organization Meeting (Kirkwood Hotel). Chairman of Committee, H. V. Pedersen, Supt. Water Works, Marshalltown, W. Va.

Nov. 7-8—Augusta, Me.
MAINE MUNICIPAL ASSOCIATION. Annual Convention. Exec. Sec., Ernest H. Johnson, 97 Maine St., Hallowell, Me.

Nov. 7-9—Atlantic City, N. J.
AMERICAN WATER WORKS ASSOCIATION—NEW JERSEY SECTION. Annual Meeting (Hotel Chelsea). Sec., C. B. Tygert, Box 178, Newark.

Nov. 11-13—Philadelphia, Pa.
NATIONAL MUNICIPAL LEAGUE. National Conference on Government (Hotel Bellevue-Stratford). Exec. Dir., Alfred Willoughby, National Municipal League, 299 Broadway, N. Y.

Nov. 11-13—Philadelphia, Pa.
NATIONAL ASSOCIATION OF CIVIC SECRETARIES. Annual Meeting to coincide with National Municipal League Conference on Government (Hotel Bellevue-Stratford). Sec., Miss H. Marie Demitt, 5724 Darlington Rd., Pittsburgh, Pa.

Nov. 11-14—Miami, Fla.
INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual Convention (Hotel Alcazar). Sec., Irvin Shulsinger, International Municipal Signal Association, Inc., 8 East 41 St., New York, N. Y.

Nov. 12-14—Cleveland, Ohio
AMERICAN PUBLIC HEALTH ASSOCIATION. Annual Meeting (Public Auditorium). Exec. Sec., Dr. Reginald W. Atwater, 1790 Broadway, New York, N. Y.

*Nov. 12-13—Birmingham, Ala.
SOUTHEASTERN ASSOCIATION OF STATE HIGHWAY OFFICIALS. Annual Meeting (Tutwiler Hotel). Sec.-Treas., H. J. Neale, State Dept. of Highways, Richmond, Va.

*Nov. 14-15—Reading, Pa.
PENNSYLVANIA MUNICIPAL AUTHORITIES ASSOCIATION. Annual Conference (Hotel Abraham Lincoln). Sec.-Treas., Claude C. Fogelman, 1717 Main St., Northampton, Pa.

Nov. 14-15—Richmond, Va.
AMERICAN WATER WORKS ASSOCIATION—VIRGINIA SECTION. Annual Convention (John Marshall Hotel). Sec., W. H. Shewbridge, State Dept. of Health, Richmond 22, Va.

*Nov. 15-17—Green Bay, Wis.
AMERICAN WATER WORKS ASSOCIATION—WISCONSIN SECTION. Annual Meeting (Northland Hotel). Sec., Leon A. Smith, Supt. Water Works, City Hall, Madison, Wis.

Nov. 17-20—St. Louis, Mo.
AMERICAN INSTITUTE OF PARK EXECUTIVES. Annual Meeting (Hotel Jefferson). Exec. Sec., Dave Hovey, P. O. Box 422, Rockford, Ill.

Nov. 17-20—Chicago, Ill.
AMERICAN MUNICIPAL ASSOCIATION. Annual Conference (Hotel Congress). Exec. Dir., Earl D. Mallery, 1313 E. 60 St., Chicago, Ill.

*Nov. 18-20—Raleigh, N. C.
AMERICAN WATER WORKS ASSOCIATION—NORTH CAROLINA SECTION. Annual Convention (Hotel Sir Walter Raleigh). Sec.-Treas., George S. Moore, Box 125, Albemarle, N. C.

*Nov. 18-20—Raleigh, N. C.
NORTH CAROLINA SEWAGE WORKS ASSOCIATION. Joint Meeting with the foregoing.

Nov. 20-22—New York, N. Y.
NEW JERSEY STATE LEAGUE OF MUNICIPALITIES. Annual Conference (Hotel New Yorker). Exec. Sec., James J. Smith, 808 Trenton Trust Bldg., Trenton, N. J.

Nov. 21-23—Miami Beach, Fla.
FLORIDA LEAGUE OF MUNICIPALITIES. Annual Meeting (Hotel Roney-Plaza). Sec.-Treas., E. P. Owen, Jr., 1707 Barnett National Bank Bldg., Jacksonville, Fla.

*Nov. 22-24—Havana, Cuba
AMERICAN WATER WORKS ASSOCIATION—CUBAN AND FLORIDA SECTIONS. Joint Meeting. Sec. Cuban Section, L. H. Daniel, P.O. Box 531, Havana. Sec. Florida Section, A. P. Black, University of Florida, Gainesville.

Dec. 2-4—Washington, D. C.
NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS. Annual Meeting. Exec. Dir., Charles S. Rhyne, 730 Jackson Pl., NW, Washington, D. C.

*Dec. 2-3—Harlingen, Texas
LEAGUE OF TEXAS MUNICIPALITIES. Annual Convention (Hotel Reese-Wil-Mond). Exec. Dir., E. E. McAdams, League of Texas Municipalities, 220 Guadalupe St., Austin, Texas.

Dec. 2-6—New York, N. Y.
AMERICAN SOCIETY OF MECHANICAL ENGINEERS. Annual Meeting (Hotel Pennsylvania). Exec. Asst. Sec., Ernest Hartford, 29 W. 39 St., New York.

Dec. 6-7—New York, N. Y.
TAX INSTITUTE. Annual Conference. Exec. Sec., Miss Mabel Walker, Tax Institute, 150 Nassau St., New York, N. Y.

Dec. 17-20—Los Angeles, Calif.
AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS. Annual Meeting (Biltmore Hotel). Exec. Sec., Hal H. Hale, 1220 National Press Bldg., Washington, D. C.

*Jan 27-30, 1947—Chicago, Ill.
ASSOCIATED GENERAL CONTRACTORS OF AMERICA, INC. Annual Convention (Hotel Stevens). H. E. Foreman, 1227 Munsey Bldg., Washington, D. C.

Elizabeth City Wells

(*Continued from page* 116)

The three-mg raw water storage reservoir of reinforced concrete was built in a square shape with retaining-wall sidewalls.

The plant uses the excess lime method of treatment. The water goes first to a mixing chamber with over-and-under baffles, and is settled in sedimentation basins designed to give four-hour retention in each of the four basins based on their rated capacities of one-half mgd. Each of the sedimentation basins discharges the clarified water into a one-half-mgd rapid sand filter through the action of Chapman hydraulic valves controlled through a Simplex-equipped filter table. The finished water has a pH of about 9.4.

The lime sludge is discharged directly into the river, and since the pH of the river water runs about 4.5, the lime is consumed quickly.

To stabilize the water delivered to the clearwell, the operators add a small amount of sodium hexametaphosphate. This works very well, Superintendent Luther points out, except that the phosphates serve as an excellent medium for the growth of algae. This problem, however, he controlled by covering the clearwell. "Clearwells should be covered anyway," he says.

Cleveland Water Supply

(*Continued from page* 98)

in the future. It also advises that the Division Avenue station be equipped throughout with centrifugal pumps driven by electric motors, with electric energy obtained from two sources. In each case these improvements will result in savings that will more than offset the cost of installation. The engineers therefore do not feel that the cost should be charged against capital expenditures.

Summary of Cost

The cost of the water requirements necessary to meet 1960 needs may be summarized thus:

1. Protection for intake crib No. 3	$75,000
2. Improvement at Division Avenue plant	772,000
3. Improvements at Baldwin plant	544,000
4. Nottingham project (including intake)	15,500,000
5. Bay Village project (including intake)	6,100,000
6. Relining existing mains (44.6 miles)	1,256,000
7. New feeder mains (128.0 miles)	19,181,000
8. New reservoirs (3)	2,300,000
9. New elevated tanks (10)	1,830,000
10. New local pumping stations (8)	420,000
11. New emergency regulators (4)	22,000
12. Modernization of existing main pumping stations	
Total	$48,000,000

In order to schedule these in an orderly fashion and furnish supply and distribution to areas now inadequately served, the report recommends that the first 4 steps be taken first. In the Bay Village project, however, it is necessary to include only the clear well and pumping station during this preliminary period. Likewise, the number of mains to be relined can be cut to 31.8 miles; new feeder mains can be reduced to 43.3 miles; the reservoirs need not be constructed immediately; only one elevated tank need be erected *immediately*, and construction of local pumping stations can be postponed. This will reduce the capital construction to a figure of $27,000,000, of which more than half is represented by a new intake and filter plant.

These conclusions and recommendations, state the firm of Havens and Emerson, represent the conviction that they constitute a proper and economical solution of the water supply needs of metropolitan Cleveland.

Looking Into the Nation's Fire Losses

Is the recent upward trend of losses due to factors which the fire departments might control?

By A. C. HUTSON

Assistant Chief Engineer
National Board of Fire Underwriters

WHAT is back of the increasing fire losses in the United States? One obvious answer to this question is that the burnable values in terms of dollars have vastly increased during the last two years. The main concern, however, is whether this recent upward trend of losses is due to factors which the fire departments might control.

It is in the operation of a fire department that there is believed to be the greatest possibility of reducing fire losses.

First, a concerted effort should be made to remove the fire department from politics. This means the appointment of the chief on the merit basis, with removal only for cause and with a definite retirement age. The present practice in many cities of changing the chief with each new administration affects the morale of the entire department.

Revision Warranted in Training for New Appointees

A review of the usual training program reveals that it is far from satisfactory. The usual routine for new appointees and the theoretical knowledge gained from lectures and text books have proved to be too slow and fails to give the men experience which would develop real fire fighting. The training practices followed by the army and navy during the war, including the actual attack of fire under the direction of trained men, were found to produce effective fire forces in a compartively short time.

The second step, therefore, in the reduction of fire losses must be a complete overhauling of the training program. Training must be a continuous effort, started with the appointee and carried on through the company, ending with a school for officers.

The third and most important factor in reducing fire losses is fire prevention. A study of many cities shows that 75% of the fires responded to are out on arrival of the fire department or extinguished with booster lines. But more significant is the fact that less than 2% of the fires produce most of the life loss and 70% of the damage by fire.

Every man of any experience in fire service knows that conditions in a large percentage of buildings are beyond the ability of any fire department to control, especially if dependence must be placed upon the possibility of early discovery and if no other technique is followed than that normal to a fire department—mainly water from hose streams handled by men only partially trained.

Measures for Holding Down Fire Losses

What is the answer to this question of high fire losses? To be perfectly candid, it is to recognize that the prime interest of every fire department is to emphasize now, and each time there is a serious loss, that loss is primarily due to improper construction, inherited from the past, or the improper operation of a hazard, or unwillingness to spend the money to store and handle a hazardous material properly.

Organize a fire prevention committee of leading citizens and convince them of the need of a modern fire prevention ordinance. Then continue the work by convincing them and other citizens that the fact they have had no serious fire is not proof they may not have one.

Too long has carelessness been held up as the cause of fire. The public should be made to realize that many conditions exist which could result in total destruction of buildings regardless of the fire department. If sprinklers and automatic alarms are not installed and stairways enclosed and other improvements made, fire losses will continue to increase.

Excerpts from Mr. Hutson's address before the International Fire Chiefs Association conference in Cleveland, Ohio, in July.

Public Records Must Be Protected

HOW VALUABLE are public records? What should be done to protect these records against fire or other loss? Unfortunately these questions become acute in all too many cases only after a fire or flood has brought destruction.

Every thinking person is more or less conscious of the value of records and of the desirability of protecting them from destruction. Few, however, know how to protect records, especially from fire. This is not to say that records are lost only through the medium of fire. Records are sometimes destroyed by water, vermin, and neglect. But, if records are adequately protected from fire, they will in a large measure be protected from the other destructive influences mentioned, except flood waters.

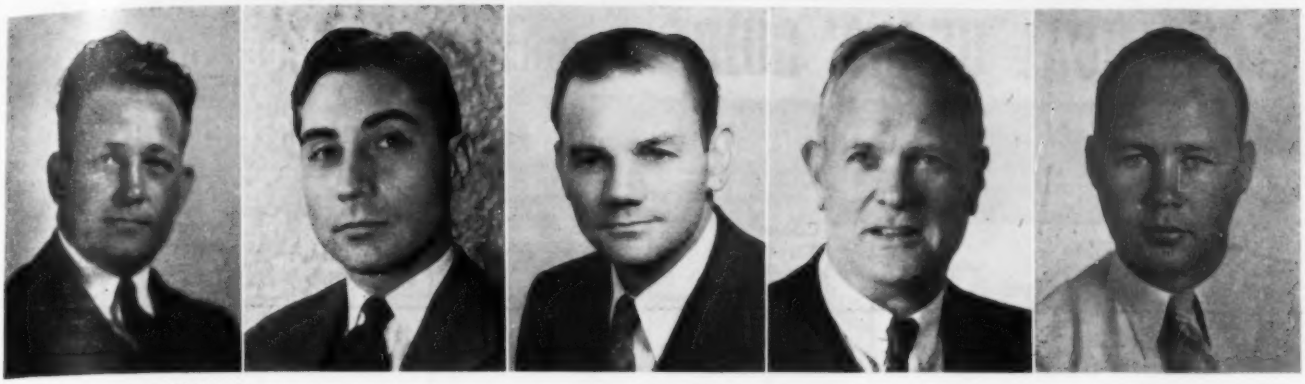
After 23 years of work, the Committee on the Protection of Records of the National Fire Protection Association reported to the annual NFPA meeting in June of this year that the greatest handicap in the protection of records from fire is the lack of appreciation by the average custodian of the irreparable loss that results from the destruction of records.

Scattered throughout the land, and indifferently protected, are the public records of birth, marriage, and death; deeds of conveyance and trust, testaments, court decrees, and a wealth of written evidence on which proof of citizenship, legal status, rights and ownership depends. Their loss may mean expensive litigation and deprivation of rights and property that have required a lifetime of effort and sacrifice.

A burned building can be replaced, even though there has been a real loss of wealth. But if a record of which there is no copy extant is burned, it is gone forever. Therefore, records call for absolute preservation.

The science of protecting records from the effects of fire may be said to have begun about 1910 when Underwriters' Laboratories, Inc., conducted the first test in which the temperatures of the furnace and of the air inside the record container under test were recorded. Adoption of a temperature rise limit has served to place the rating of record containers upon a quantitative basis and suggested the temperature rise method of rating walls and partitions.

While it is hardly probable that the best in fire resistance has been achieved, there is no crying need for further technical improvement at this time. The manufacturers of record protection equipment have done their part. More important now is better understanding on the part of record custodians in estimating the protection needed and providing the protection which the situation demands.



Wilbur E. Harkness
Leesburg, Fla.

Robert E. Layton
Barre, Vt.

Ross Miller
Santa Rosa, Calif.

Ulric R. Grey
Delano, Calif.

Jack V. Doriot
Navasota, Texas

City Manager Appointments

The portraits on this page are of city managers whose appointments have been announced in preceding issues.

JAMES R. BENSON, city clerk has been appointed manager of Wilmington, N. C.

C. C. CONGDON, manager of Bellows Falls and Rockingham, Vt., since 1940, manager of Shillington, Pa., 1937-40, and Milton, Pa., from 1928-1937, has been appointed city manager of Berkley, Mich.

ROBERT W. FLACK, manager of Springfield, Ohio, 1924-29, Durham, N. C., 1929-35; San Diego, Calif., 1935-39, and since 1941 manager of Charlotte, N. C., has accepted the appointment at Durham, N. C.

WILLIAM GILL, JR., of the American-First Trust Company, has been appointed city manager of Oklahoma City, Okla.

HORACE P. GULDEN is borough manager of Lewiston, Pa. Last month Mr. Gulden was incorrectly listed as borough manager of Carlisle, Pa., of which GEORGE P. SEARIGHT is borough manager.

C. K. HUSTON is city manager of Sweet Home, Ore.

CLAYTON E. JEWETT has been appointed first city manager of Ripley, Maine.

R. K. MCCORD, city manager of Avondale Estates, Ga., has been appointed first city manager of Medford Lakes, N. J.

LYMAN S. MOORE, assistant administrator, National Housing Agency, Washington, and former administrative assistant to the city manager of Kansas City, O., has been selected to succeed JAMES E. BARLOW, who retires as manager of Portland, Maine, on November 1.

C. V. SIGNOR, former water superintendent and city engineer, has been appointed first manager of Grants, Pass, Ore.

GEORGE H. SIMPSON has been appointed first city manager of Madison, S. D.

FRANCIS A. VAUGHN became manager of College Station, Texas, on July 1, succeeding LLOYD D. SMITH.

CLARENCE E. RIDLEY
Executive Director
International City Managers' Association, Chicago, Ill.

Municipal Tax Exemptions Need Study

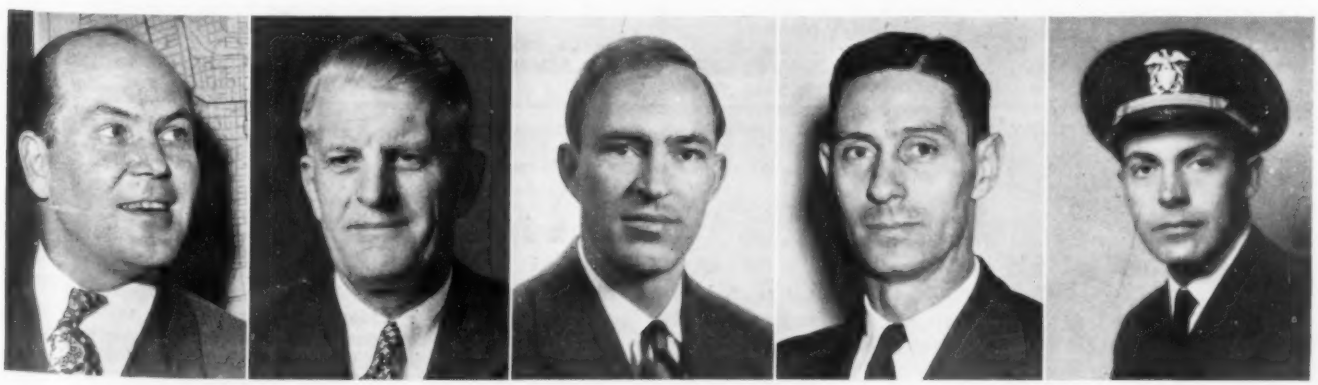
PROPERTY exempt from municipal taxation in the city of Buffalo, N. Y., has increased 221% in the last 30 years, according to the July 4 issue of *Just a Moment*, published by the Buffalo Municipal Research Bureau, Inc. On October 1, 1945, the value of the properties exempt amounted to $209,824,170, or a full 20% of the city's total property valuation.

The city of Buffalo itself owns 52% of the tax-exempt property. Other units of government and public authority own 18%, and the remaining 30% is owned by various private agencies and individuals such as religious organizations, charitable associations, veterans, etc. If all these properties had been subject to taxation this year, the taxes would have amounted to nearly $7,000,000.

Just a Moment has these suggestions:

"The subject needs careful study in all its aspects. Presumably, the city itself has enough property. In the future, if new lands for parks and schools are needed, some presently-owned lands should be sold off. In fact, careful scrutiny of all city-owned property at the moment might result in beneficial abandonments and sales for excellent business and residential sites.

"As to other exemptions, the city should definitely exercise more authority, if possible. It is not fair to the city taxpayers as a whole or good for the future of the city for private associations to acquire much larger parcels than they need and have the whole amount tax-exempt. Each exemption should be studied as to its purposes and needs, and then only the amount of property found necessary should be exempt. Along the same lines, exempt property which really is being used for business purposes, making profits, and perhaps drawing business from taxpaying enterprises, should be given some thought."



O. W. Campbell
San Jose, Calif.

Frank H. Goebel
Grand Rapids, Mich.

James E. Neal
Redding, Calif.

C. L. Lineback
Nevada, Mo.

Clifford McKibben, Jr.
Winter Park, Fla.

CHEMICAL USERS' GUIDE To General Chemical Company Products for Treatment of Water, Sewage, and Industrial Wastes

PRODUCT	AVAILABLE FORMS	COMMERCIAL STRENGTH (MIN.)	SHIPPING CONTAINERS	APPLICATIONS
Aluminum Sulfate $Al_2(SO_4)_3 \cdot 14H_2O$ approx. *(Filter Alum)*	Commercial & Iron Free: Lump • Ground Powdered	17.25% Al_2O_3	Bags Barrels • Drums Bulk Carloads	Coagulant for water and sewage. Dewatering conditioner for sewage sludge. 1% Sol. pH 3.4.
Aqua Ammonia NH_4OH plus Water *(Ammonia Water)*	Colorless Liquid	26° Be. (29.4% NH_3)	Steel Drums Carboys	Used with chlorine to form chloramines for water disinfection.
Ammonium Aluminum Sulfate $Al_2(SO_4)_3 \cdot (NH_4)_2SO_4 \cdot 24H_2O$ *(Ammonia Alum) (Crystal Alum)*	Lump Nut Granular Powdered	11.2% Al_2O_3	Bags Fibre Drums	Coagulant for water. Advantageous for pressure filters. Supplies ammonia for chloramine formation. 1% Sol. pH 3.5.
Sodium Bisulfite, Anhydrous $Na_2S_2O_5$ *(ABS) (Sodium Metabisulfite)*	Powdered	97.5% $Na_2S_2O_5$ (Equiv. 65.5% SO_2)	Fibre Drums	Antichlor. Remove iron and manganese deposits from filter sand. 1% Sol. pH 4.4.
Sodium Silicate $Na_2O \cdot X(SiO_2)$ plus H_2O *(Water Glass) (Silicate of Soda)*	Viscous Liquid	38° to 52° Be. Various Ratios of Na_2O:SiO_2	Drums Tank Cars Tank Trucks	1. Aid in floc formation. 2. Prevent red water corrosion in distribution lines. 1% Sol. pH 12.7
Sodium Thiosulfate $Na_2S_2O_3 \cdot 5H_2O$ *(Hypo) (Sodium Hyposulfite)*	Crystals: Prismatic Rice Selected Universal Granular	99.75% $Na_2S_2O_3 \cdot 5H_2O$	Bags Barrels Fibre Drums	Antichlor. Water solution is neutral.
Sulfuric Acid H_2SO_4 plus H_2O *(Oil of Vitriol)*	Corrosive, oily liquid Various strengths	66° Be. (93.19% H_2SO_4)	Bottles Carboys Drums Tank Trucks Tank Cars	1. Reduce pH and alkalinity. 2. Regenerate carbaceous zeolites and ion exchangers. 3. Activate Baylis Silicate.
Potassium Aluminum Sulfate $Al_2(SO_4)_3 \cdot K_2SO_4 \cdot 24H_2O$ *(Potash Alum)*	Lump Nut Granular Powdered	10.7% Al_2O_3	Bags Fibre Drums	Coagulant for water. Slow, even rate of solubility desirable for solution pot feeders. 1% Sol. pH 3.52.
Sodium Sulfite, Anhydrous Na_2SO_3 *("Sulfite")*	Granular Powdered	98.5% Na_2SO_3	Bags Fibre Drums	Antichlor, oxygen remover. Weak solutions absorb oxygen readily. 1% Sol. pH 9.8.
Sodium Sulfate, Crystal $Na_2SO_4 \cdot 10H_2O$ *(Glauber's Salt)*	Crystal & Needle Crystal	96% $Na_2SO_4 \cdot 10H_2O$	Barrels Bags Drums	Neutral Solution. Boiler water treatment (maintenance of sulfate-carbonate ratio).
Sodium Sulfate, Anhydrous Na_2SO_4	Powdered	99.5% Na_2SO_4	Bags Barrels	Neutral Solution. Boiler water treatment (sulfate-carbonate ratio)
Trisodium Phosphate $Na_3PO_4 \cdot 12H_2O$ *(TSP)*	Crystal	98.5—103% $Na_3PO_4 \cdot 12H_2O$ (Equiv. 19% P_2O_5)	Bags Barrels Fibre Drums	Boiler water treatment. Cleaning compound. 1% Sol. pH 11.8-12.0.
Disodium Phosphate, Crystal $Na_2HPO_4 \cdot 12H_2O$	Crystal	98% $Na_2HPO_4 \cdot 12H_2O$ (Equiv. 19.5% P_2O_5)	Bags Barrels Fibre Drums	Boiler water. (Calcium and magnesium precipitation.) 1% Sol. pH 8.4.
Disodium Phosphate, Anhydrous Na_2HPO_4	Powdered Flake	96% Na_2HPO_4 (Equiv. 48% P_2O_5)	Same	Same as Crystal, but stronger product.
Sodium Fluoride NaF *(Fluoride)*	Powdered (white or blue colored: Nile Blue) Light or dense	90% and 95% NaF	Bags Barrels Fibre Drums	Fluorination of water supplies. (For information, consult with local health officers.)

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Along the Waterfronts—II

(*Continued from page 127*)

Another city with a lakefront program is Milwaukee. According to a letter to THE AMERICAN CITY from Elmer C. Krieger, secretary of the city's Long Term Improvement Technical Committee, Milwaukee owns 6.8 miles of the 7.5 miles of lakefront within the city. Long-term joint county-city plans call for the acquisition of the remainder. A sum of $500,000 has been appropriated annually for the lakefront development since 1944 and the plans call for similar annual appropriations through 1950. Plans call for a bridge 125 feet above the water at the mouth of the river and the development is dependent upon the approval of these plans. Preliminary designs for the bridge are now being prepared by the city engineer, but to date the common council has made no decision on the matter.

To Make Florida Resorts Even Better

Florida cities are, of course, keenly aware of the importance of their beautiful waterfronts as tourist attractions.[6]

Dade County, where Miami is located, is particularly active in this connection. By a special act of the state legislature, the county is permitted to levy a tax of up to two mills for the purpose of acquiring, developing and maintaining parks. This portion of the coast is protected by a necklace of keys that forms Biscayne Bay and joins the Florida Keys at the southern tip of the peninsula. There are 210 acres of bay and ocean front north of Miami Beach now being developed by the county as a park with fishing docks and waterway drives and a long beach which is being made 100 feet wider. South of the city at a site near Homestead, county plans call for building still another recreation center, complete harbors and docks for small boats, parking spaces, picnic grounds, and a bathing beach. At this site the county has already filled, graded, and planted 30,000 yards of low bayshore land, dredged a harbor, and built a custodian's house.

The most elaborate work, which has already begun, is planned for two of the Keys, Biscayne and Virginia. The northern third of Biscayne, a thousand acres, is in the process of becoming Crandon Park, named after the founder of the county park system. A yacht basin at the northern tip of the Key and a $4,000,000 causeway financed by bonds are being built, thus linking Miami with the south end of Virgina Key and thence to Biscayne.

Two projects are planned for the southern tip of Virginia Key. Forty acres on the ocean side with a half mile of beach front have been set aside as a recreation area for Negroes. Temporary buildings and facilities have been installed and boat transportation to the Key arranged. Though the present colored population of the county is not much more than 35,000, this park is planned to be able to accommodate a future Negro population of as many as 250,000. Separated from this area by a 100-foot screen of trees there is to be a large aquarium and marine laboratory. The county proposes to finance the project, for it is expected that it will soon pay for itself in admission fees.

Panama City on St. Andrew's Bay is another community that has been particularly active in waterfront planning.[7] Plans call for seventeen acres of made land with a seawall and yacht basin and continuation of the shore drive along the seawall. A dance pavilion built over the water on one side of the yacht basin is contemplated. A concrete stadium and combination baseball and football field is also provided for. An auditorium seating 2,000 persons would be located on the shore. Parking space will be provided for 1,000 cars. The Chamber of Commerce, which has been active in formulating and promoting this plan, has pointed out that enough land is included in the plan to make possible the future building of other features.

[6] See "Winning the Fight for a People's Shoreline," THE AMERICAN CITY, March 1945, page 95, for the story of St. Petersburg; and "Seashore Recreational Plant Pays Well," THE AMERICAN CITY, August 1945, page 71, for a story about Sarasota.

[7] See "Town Meeting Arouses Interest in Improvement Plan for Panama City," THE AMERICAN CITY, January 1946, page 71.

EDITORIAL NOTE.—Because of the evident nationwide interest in waterfront and harbor improvements, THE AMERICAN CITY will be glad to have its attention called to any current planning of special significance not included in the foregoing summary.

Noise Abatement Award

THE GRAND NATIONAL Achievement Award of the National Noise Abatement Council for 1946 has been presented to Chicago, Ill., for its outstanding work in the nation-wide fight against unnecessary noise. In a recent bulletin, the Council announced the grand award and named the winners of the city-population group awards, after consideration of noise-abatement activities in 95 cities throughout the country.

The winning cities in the city-population groups are:

Group 1 (Cities over 500,000 pop.—New York, N. Y.

Group 2 (250,000 to 500,000 pop.)—Memphis, Tenn.

Group 3 (100,000 to 250,000 pop.)—Salt Lake City, Utah.

Group 4 (Cities less than 100,000)—Beverly Hills, Calif.

Eight cities received honorable mention. They are: Baltimore, Md.; St. Louis, Mo.; Rochester, N. Y.; New Orleans, La.; Jacksonville, Fla.; Charleston, W. Va.; Evansville, Ind., and Little Rock, Ark.

Chicago has won the award for cities over 500,000 every year since 1943, and this year received the grand award gold plaque for its work in noise abatement. The Chicago Noise Abatement Commission was cited by the Council as having played an important part in Chicago's program.

The Municipal Bond Market

Some sales of new issues reported in recent issues of *The Bond Buyer*

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$200,000	New Britain, Conn., Sewer Fund, Nineteenth Series, Second Issue	1	10.66 Avg.	.996
170,000	Lexington, Mass., Sewer Construction	1	1-10 Ser.	.88
176,000	Freeport, N. Y., General Improvement	1.20	7.5 Avg.	1.227
250,000	Lewiston, Me., Building, Improvement and Equipment	1.25	8 Avg.	1.094
160,000	Jefferson City, Mo., Street Improvement	1.25	13.66 Avg.	1.221
200,000	Monessen, Pa., Street, Sewer, Playground, and Improvement	1.25	8.66 Avg.	1.162
102,000	Ottumwa, Iowa, Bridge	1.25	6.33 Avg.	1.032
400,000	Portsmouth, N. H., Permanent Improvement, Issue of 1946	1.25	1-20 Ser.	1.159
300,000	Lakewood, Ohio, Sch. Dist.	1.25	10.75 Avg.	1.171
300,000	Grosse Pointe, Mich., Street Improvement	1.25	7.75 Avg.	1.247
175,000	New Philadelphia, Ohio, Municipal Building	1.50	10.5 Avg.	1.359
1,000,000	Peru, Ind., Electric Utility Revenue	1.50	7.5 Avg.	1.41

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KOEHRING COMPANY
Milwaukee, Wisconsin (10)

MUD-JACK METHOD

Municipal and Civic Publications

Planning Made Alive

NEW CITY PATTERNS.—*By S. E. Sanders and A. J. Rabuck. Reinhold Publishing Corp., 330 West 42nd Street, New York 18, N. Y.* 1946. *Index.* 197 *pp.* $8.00.

Featuring a profusion of illustrations well integrated with text material, this book is a most readable recapitulation of specific urban planning objectives and methods of application. It is enthusiastic in tone, making planning issues seem alive and understandable

The authors, both with the City Planning Research Division, PBA, advocate "fearless planning and construction on a scale previously unknown in America, except in our prosecution of the war, to make our cities fit for world competition and adequate to provide for our rising standard of living." Emphasis is laid on the organization of metropolitan planning commissions and methods to be followed in the execution of master plans. The authors declare that urban reintegration must be based on sound planning objectives. They are vigorously opposed to piecemeal planning and zoning ordinances based on expediency rather than on social objectives.

Attention is given to financing the "new city pattern" through the cooperation of all levels of government and private enterprise. Many-sided federal aid is urged for the proposed urban redevelopment. An excellent section is devoted to population densities and the necessity of planning comprehensively on a neighborhood basis.

Also valuable are the diagrams showing the haphazard development of cities, and the illustrations of blight, its consequence and relation to the national welfare. An addendum is included, showing some outstanding examples of general master plans for the redevelopment of a few foreign cities.

Newark Air and Seaport Facilities Studied

DEVELOPMENT OF NEWARK AIRPORT AND SEAPORT.—*Port of New York Authority,* 111 *Eighth Ave., New York* 11, *New York.* 1946. *Illus.* 43 *pp.*

Effectively prepared study of the marine and air terminal facilities at Newark, N. J. The survey was made by the Port of New York Authority, which proposes a joint New York-New Jersey program for the development of the port district. The proposal outlines a program which would call for a completely new airport with about three times the capacity of the present airport; the rehabilitation of wharves, buildings, pavement, and trackage of the port; and the redredging of the channel. The report presents detailed recommendations for both the airport and seaport plans and illustrates the projects with photographs, maps, and sketches.

Regulating Refrigerated Locker Plants

MUNICIPAL REGULATION OF REFRIGERATED LOCKER PLANTS — MODEL ORDINANCE ANNOTATED.—*By Charles S. Rhyne. Report No.* 115. *National Institute of Municipal Law Officers,* 730 *Jackson Place, N.W., Washington, D. C.* 1946. $2. *(free to members).*

Report dealing with the question of whether or not a city can enforce regulations controlling the inspection of meat and foods placed in refrigerated locker plants by an individual consumer. The pamphlet points out the increasing number of these "frozen food" lockers throughout the country and the accompanying health problem which must be solved. The author presents the experiences of several cities in dealing with the problem and suggests a possible solution in the model ordinance drawn up by the National Institute of Municipal Law Officers.

A Master Plan for Richmond

A MASTER PLAN FOR THE DEVELOPMENT OF THE CITY.—*City Planning Commission,* 217 *Governor St., Richmond* 19, *Va.. Maps.* 218 *pp.*

Carefully presented, comprehensive plan for Richmond which was officially adopted July 12, 1946, soon after its publication. Unified development of the city, adequate transportation facilities, relief of traffic congestion, stable property values, adequate recreational areas, and a complete system of public services are a few of the objectives outlined by the Richmond planners.

The frontispiece of the report sets forth the theme of all planning in an amusing poem "The Calf-Path," originally printed in THE AMERICAN CITY, which warns against the blindness that leads men to keep old habits and precedents. The master plan proposed is designed to make future Richmond a city of utility, beauty, and efficiency.

St. Paul Reports on Planning

PLANNING ST. PAUL FOR BETTER LIVING.—*City Planning Board of St. Paul, Minn.* 1946. *Illus.* 32 *pp.*

Effectively illustrated pamphlet designed to acquaint St. Paul citizens with the aims of city planning in their city. The report points out the need of community support and interest if the plans are to be successfully carried out. Attractive neighborhood units, a modern downtown district, an adequate traffic system, and rehabilitation of blighted areas are cited as integral parts of a new and better St. Paul. Action that has been taken in the past is outlined and tools for future action are suggested.

Three Years of Planning in Wichita

COMPREHENSIVE PLAN: CITY OF WICHITA, KANSAS.—*City Planning Commission, Wichita, Kans.* 1946. *Illus.* 218 *pp.*

Impressive comprehensive city plan for Wichita—the result of three years of study and research. This book brings together the nine separate reports which make up the city plan, reports which have been published separately during 1943, 1944, and 1945. All of the reports, except for the suggested public works program, have been adopted by the City Planning Commission. The surveys deal with past development of Wichita, population characteristics, transit facilities, street plan, airport facilities, public buildings, recreation and schools, subdivision regulation, and public works.

Redevelopment Plans for Detroit's Waterfront

PROPOSED PLAN FOR REDEVELOPMENT OF THE RIVERFRONT.—*Detroit Master Plan. Detroit City Plan Commission, Griswold Building,* 1214 *Griswold St., Detroit, Mich.* 1946. *Illus. Unpaged.*

Riverfront redevelopment plan prepared by the City Plan Commission at the request of the Common Council and containing contributions of many city departments and public agencies in Detroit. The report takes inventory of the blighted area and attacks the problem by determining what must be removed from the district, what buildings and harbor installations must be permitted to remain in the area, and how the industries which must have access to the water can be harmoniously related to the project. The study then presents maps and sketches of a park drive, recreation facilities, port facilities, government buildings, industrial and residential areas which would be a part of the long-range plan. The stages of development are outlined and methods of realizing the plan are discussed. (See page 125 of this issue.)

Help in Modernizing Building Codes

BUILDING CODE SUGGESTIONS FOR VEHP.—*Veterans Emergency Housing Program Community Action Bulletin No.* 4. *National Housing Agency, Washington, D. C.* 1946. *Mimeo.* 7 *pp.*

Fourth in a series of bulletins designed to help the Mayors' Emergency Housing Committee carry out its program. Each bulletin is concerned with a particular problem and outlines action the committee can take. This report stresses the importance of building codes in the present emergency as a means of protecting the public against unsound building practices which might jeopardize health and safety. An inadequate building code is a hindrance to any housing program and the booklet offers the Committee an aid in making a rapid and accurate check of existing building codes and suggests steps to be taken in recommending amendments which would eliminate obstacles to the program.

Housing References

REFERENCES AND HOUSING MATERIAL ON I. HOUSING AND HOUSING NEEDS, II. ECONOMIC AND SOCIAL COSTS OF GOOD AND BAD HOUSING, III. WHO PAYS FOR PUBLIC HOUSING.—*Federal Public Housing Authority, National Housing Agency, Washington, D. C.* 1946. *Mimeo.* 30 *pp.*

A digest of facts and statistics on three phases of the housing field. The booklet contains quotations from books, pamphlets, speeches, and reports dealing with housing needs, the costs of good and bad housing, and financing public housing. Each quotation or chart is accompanied by a complete statement of its sources and should be useful to anyone doing research in the field.

Emergency Housing Code for Chicago

CHICAGO EMERGENCY HOUSING CODE.—*Passed by the City Council March* 14, 1946. *Ludwig D. Schreiber, City Clerk,* 121 *N. La Salle St., Chicago, Ill.* 1946. *Appendices.* 26 *pp.*

Special ordinance effective for a two-year period (1946-48) which was passed by the Chicago City Council in March of this year. The code covers property standards, minimum construction requirements, minimum planning requirements, and drawings and permit requirements. Additional standards and references are given in the tables of the appendices.

Louisville Development Association Reports

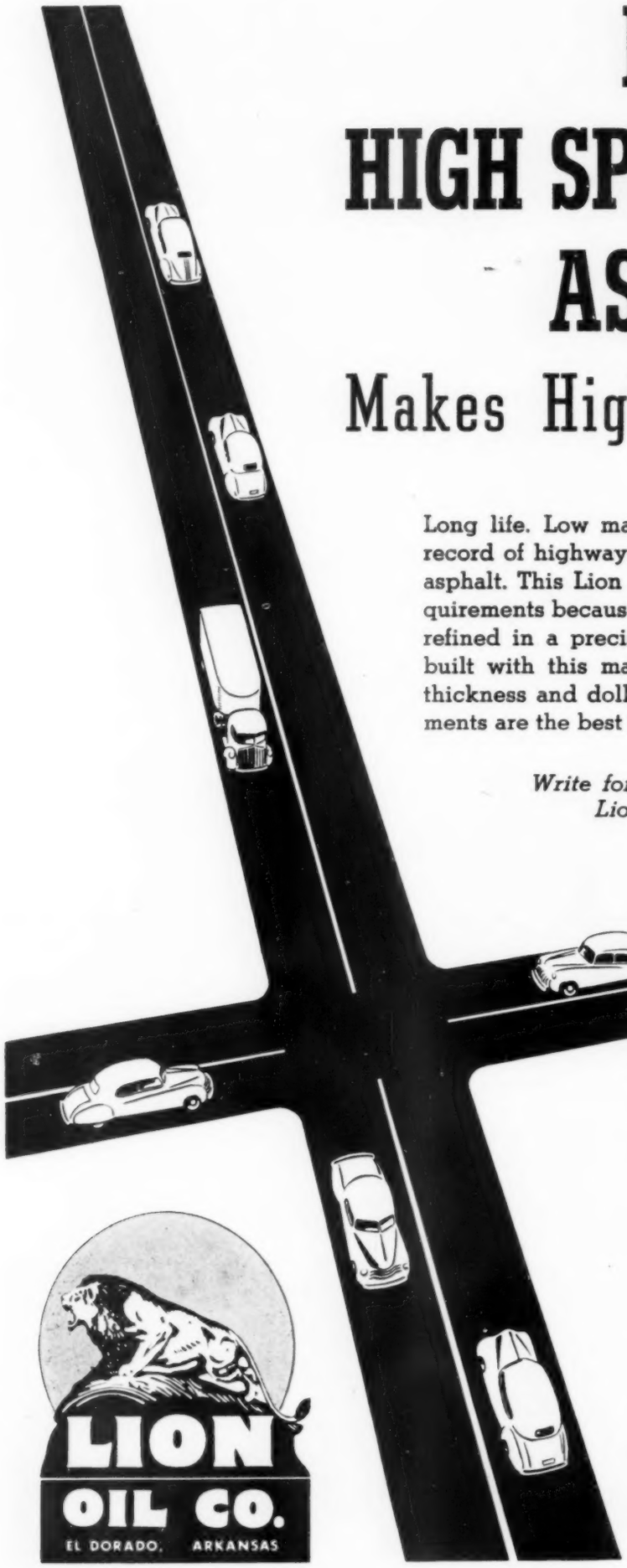
PLANS IN ACTION.—*Louisville Area Development Association,* 301 *South Fifth St., Louisville, Ky.* 1946. *Illus.* 24 *pp.*

Report of the civic, non-profit corporation organized to study the problems of the Louisville Area and plan solutions. The pamphlet presents highlights from the activities of the various committees. The reports are illustrated with pictures of conditions the Association is working to abolish, and the progress in the work the committees are doing is outlined. A complete list of committee members and subscribers is included.

Listing of Bond Dealers

DIRECTORY OF MUNICIPAL BOND DEALERS OF THE UNITED STATES.—*The Bond Buyer,* 67 *Pearl St., New York* 4, *N. Y.* 1946. 408 *pp.* 50c.

Valuable directory for bond buyers throughout the country. The booklet lists dealers by states and by cities within each state. For quick and easy reference the directory also contains an alphabetical list of dealers in the branch offices mentioned in the directory. Also included are the names and addresses of the municipal bond attorneys of the United States.



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4. *High Ductility at Low Temperatures.*
5. *Low Susceptibility Factor.*
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EL DORADO, ARKANSAS

Traffic Engineering Manual

GETTING RESULTS THROUGH TRAFFIC ENGINEERING.—*Booklet III. Traffic and Transportation Division of the National Conservation Bureau, 60 John St., New York, N. Y. 1946. Illus.*

Third in the series of pamphlets under the general title, "Getting Results Through Traffic Engineering," which presents examples of traffic problems and the solutions adopted. The entire series includes 72 examples, of which numbers 47 to 72 appear in this booklet. The problems, as contributed by leading traffic and transportation authorities throughout the country, are stated; a sketch showing the traffic engineering improvements made; a discussion of the solution to the problem; and a statement of results is given in each case. The "before" and "after" sketches are helpful and effective references of ideas in solving similar problems. A tabulation of the entire 72 examples is given at the end of this study, listing examples as they appeared numerically, and indexing them as to location and subject.

New Suggestions for Memorials

HIGHWAY WAR MEMORIALS.—*Highway Research Board, 2101 Constitution Ave., Washington 25, D. C. 1945. Illus. 17 pp. text, 40 pp. pictures.*

Analysis of the highway memorial idea, its development and its place in community plans for war memorials. The booklet discusses highways, urban streets and boulevards, and roadside areas as to maintenance, design, and landscaping. In addition to the text, there are a number of photographs showing graphically the development of these memorials commemorating veterans and battles from the period of the Revolution to the present day.

Municipal Personnel Administration

PERSONNEL: A CIVIC GUIDE TO ECONOMY IN MUNICIPAL GOVERNMENT.—*No. 6. The Tax Foundation, 30 Rockefeller Plaza, New York, N. Y. 11 pp.*

Sixth in a series of manuals published by the Tax Foundation as a guide to civic appraisals of municipal government. This booklet deals with the importance of successful personnel administration in a program of overall economy. Organization of the personnel department is discussed, and a useful chart setting forth the lines of appointment authority for effective administration is presented. The advantages of the merit system are analyzed and the need for strong citizen support to insure the success of such a system is pointed out. A bibliography of books, pamphlets, and periodicals is included.

Report of Welfare Activities

CHICAGO'S PUBLIC WELFARE DEPARTMENT: A RETROSPECTIVE REPORT, 1945.—*City of Chicago Welfare Administration, Chicago, Ill. Appendix Tables I-XII. 38 pp.*

Annual report of the activities of the Chicago Welfare Administration. A general statement of policies and administration is followed by an analysis of trends and a report of assistance and services available. Charts and tables furnish a month-by-month picture of the assistance provided by the administration.

Municipal Finances in 1944

SUMMARY OF CITY GOVERNMENT FINANCES IN 1944; CITY FINANCES, 1944.—*Vol. 3: Statistical Compendium. Bureau of the Census, Department of Commerce, Washington, D. C. 1946. Tables. 46 pp.*

This report is a preliminary summary of municipal finances in 1944 in cities having a population of over 25,000. These statistics are compiled each year by the Bureau of the Census and published in final form in a three-volume statistical compendium. This study will become a part of the 1944 compendium. The tables include general revenue, by source and city; general expenditure, by character and city; long-term debt outstanding, etc. Maps showing the location of the cities covered in the report are useful for quick reference.

How Cities Are Dealing with the Parking Problem

AUTOMOBILE PARKING IN CENTRAL BUSINESS DISTRICTS.—*Technical Bulletin No. 6. Urban Land Institute, 1737 K Street, N. W., Washington, D. C. July, 1946. Tables. 15 pp. $2 to Non-members.*

Report of the Central Business District Council of the Urban Land Institute concerning the problem which appears to be at the heart of any program to stabilize and rehabilitate the downtown business area. The Council points out that no universal long-range program to solve the parking problem can be set up without taking into consideration the various aspects of the problem in each city. The study does not attempt to offer such a parking formula, but presents the programs of various cities together with an analysis of legal aspects of parking programs. Detroit, Chicago, Baltimore, Dallas, Louisville, and Los Angeles plans are outlined, with financial and structural statistics.

Aviation Reference Guide

AMERICAN AVIATION DIRECTORY.—*Vol. 7, No. 1. American Aviation Publications, American Building, Washington 4, D. C. Spring-Summer 1946. Indices. 620 pp. $5.00.*

Comprehensive directory of aviation officials and companies in the United States, Latin America, Africa, Canada, Europe, and Australasia. The material is arranged in sections, according to the type of activity. The sections are: air transport, parent and holding companies, manufacturing, accessories and equipment, special services, local air services, aviation publications, associations, and government agencies concerned with aviation. The book also includes an index of personnel and advertisers.

Housing in Portsmouth

ACCOMPLISHMENTS; OBJECTIVES, 1938-45—*Housing Authority of the City of Portsmouth, Va., 1900 Columbus Ave., Portsmouth, Va. 1946. Illus. 47 pp.*

Comprehensive report of the activities and accomplishments of the Portsmouth Housing Authority since its organization in 1938. The survey traces the development and growth of the Authority, the building of the nine projects in the Portsmouth area, and the plans for future projects. Pictures of the projects and descriptive paragraphs of tenant activities illustrate the summary. The report concludes with an outline of the work still to be done by the Authority.

Allegheny Conference Housing Survey

HOUSING SURVEY OF PITTSBURGH AND ALLEGHENY COUNTY. PART I. FACTUAL REPORT. —*By Max Nurnberg. Allegheny Conference on Community Development, Pittsburgh, Pa. 1946. Mimeo. Tables. 87 pp.*

Comprehensive array of material on all phases of housing conditions in the area studied. Evidence is shown of extent to which Pittsburgh's competitive strength is hampered by existing housing conditions. The report is divided in two sections—Section I: Text, and Section II: Appendices and tables. Section II is devoted largely to exhaustive inter-city comparisons between Pittsburgh and other similar city areas.

Zoning Guide

EFFECTIVE ZONING.—*New Jersey State Department of Economic Development, Division of Planning and Engineering, Trenton, N. J. 1946. 13 pp.*

Revised reprint of the *Pennsylvania Zoning Primer*, published originally by the Pennsylvania State Planning Board, and prepared for them by Russell VanNest Black. The study is presented in outline form, giving valuable answers to questions concerning methods of preparing and administering effective zoning ordinances. The importance of good zoning as an instrument for the protection of property values, assuring orderly community growth, and safeguarding public health is stressed by the author.

Police Department Conditions in Virginia

SALARIES AND WORKING CONDITIONS OF POLICEMEN IN VARIOUS VIRGINIA POLICE DEPARTMENTS.—*Report No. 294. League of Virginia Municipalities, 902 Travelers Building, Richmond 19, Va. 1946. Tables. 14 pp. 50c to non-members.*

Tables presenting statistics of salaries, working hours, vacation periods, sick leave, and police equipment in police departments throughout Virginia. The study is based on questionnaires distributed by the League of Virginia Municipalities in May 1946. Answers to the questionnaire were received from cities, towns, and counties and the survey represents these units of government.

Pennsylvania Handbook

KNOW PENNSYLVANIA: YOUR STATE AND LOCAL GOVERNMENT. A HANDBOOK OF BASIC INFORMATION.—*By Louise M. Young, Ph.D. and Harold F. Alderfer, Ph.D.* The Telegraph Press, *Harrisburg, Pa. 1946. 180 pp.*

Prepared in the belief that an informed public is the best possible promoter of good government, this compact handbook is designed to give interested citizens a general view of the structure and operation of government in the state of Pennsylvania. In our complex society, requiring government of great scope and power, the authors believe that a wider knowledge of the techniques of governmental machinery is necessary to make our citizens effective critics and responsible participants.

Chapters well interspersed with clarifying questions as subject headings aid greatly in making the material easy to assimilate. Citizens' groups or agencies in other states would do well to publish similar guides.

Other Reports Received

CINCINNATI, OHIO.—*Planning For Housing.* Planning and Development News, July, 1946. Citizens' Planning Association for Development of the Cincinnati Area. 6 pp.

CLEVELAND, OHIO.—*Planning Cleveland in 1945.* Annual Report of Cleveland City Planning Commission. 1945. 23 pp.

DUBUQUE, IOWA.—Forty-sixth Annual Report of Water Department, 1945-46. 63 pp.

EAST CLEVELAND, OHIO.—Annual Report for 1943-1944-1945. Charts. 4 pp.

FEDERAL WORKS AGENCY.—*Public Construction and Construction Materials.* Monthly publication. July, 1946. Washington, D. C. Tables. 31 pp.

HARTFORD, CONN.—*A Report to Members and Friends for Fiscal Year Ending June 30, 1946.* Connecticut Public Expenditure Council, Inc. 1946. Unpaged.

HUTCHINSON, MINN.—Ninth Annual Report of Light and Power Commission. 1946. 15 pp.

LEWISTON, ME.—Annual Report. 1946. Illus. 58 pp.

NEWARK, N. J.—Annual Report of Department of Health. 1945. Mimeo. 29 pp.

ORLANDO, FLA.—Annual Report of the Utilities Commission. 1945. Unpaged.

PALO ALTO, CALIF.—*Palo Alto's Health in 1945.* Annual Report of Department of Health. Tables. 24 pp.

PORTLAND, ORE.—Forty-Third Annual Report of Civil Service Board. 1945. Mimeo. 15 pp.

ST. LOUIS PARK, MINN.—Annual Financial Statement. 1945. Tables. Unpaged.

TOPEKA, KANS.—Annual Report. 1945. Charts. 57 pp.

WASHINGTON.—1946 *Salary Rates For Municipal Positions in State of Washington.* By Donald C. Sampson. Report No. 64. University of Washington, Municipal Research and Services. 1946. Mimeo. Tables. 19 pp.

WINNETKA, ILL.—Annual Report of Finance Department, 1946. Mimeo. 18 pp.

ZANESVILLE, OHIO.—*The Administration of the Civil Service Commission in Zanesville, Ohio.* Report 12. Chamber of Commerce. 1946. 15 pp.

REGISTRATIONS *SHOW* IT — OPERATORS *KNOW* IT!

Dump Body by
MARION METAL PRODUCTS CO., Marion, O.

"FORD TRUCKS LAST LONGER!"

One big reason—
FORD AXLES STAND UP!

Ford Truck axle shafts carry no weight load, because *ALL* Ford Trucks have ¾-floating or full-floating axles. All weight stresses are carried on the axle housing—none on the shafts—minimizing shaft breakage. Driving pinion is straddle-mounted on 3 large roller bearings, maintaining positive mesh with ring gear—no destructive springing away under stress. Differentials have 4 sturdy pinions, even in light duty chassis, spreading the load and strain.

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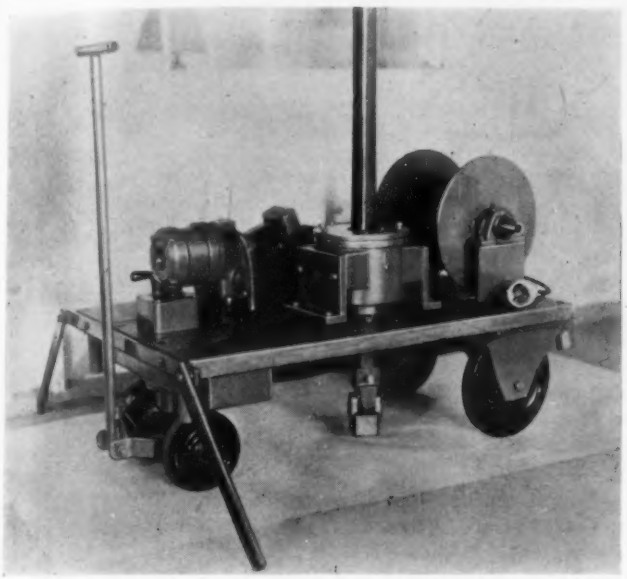
FORD TRUCKS

MORE FORD TRUCKS IN USE TODAY THAN ANY OTHER MAKE

News and Illustrations

Items of interest to city, town and county officials and others concerned with the economical construction and efficient operation of public improvement undertakings

Electric Power Truck for Gates and Gate Valves



The new Payne Dean electric power unit for operating gates and gate valves. It is wheeled alongside a floor stand and the shaft connected or placed over an underground valve and connected by universal socket and square shaft.

The Payne Dean valve operator, mounted usually on a truck and used to facilitate the operation of gate valves in a water distribution system, now has a complementary aid that will also be useful in power plants; water, filtration, and sewage treatment plants; pumping stations, dams, and similar places where there are gate valves.

This new unit, the Dean electric power truck, manufactured by Payne Dean & Co., Madison, Conn., has two horizontal slow-speed shafts which can be connected to the floor stand shaft by a telescopic or flexible shaft. It also has a vertical slow-speed sliding shaft for operating gates under the ground.

Power is furnished by a polyphase motor-driven reduction unit which drives through a chain to the bevel-geared vertical shaft unit. An adjustable shear coupling protects the gates. All shafts are connected to two Veeder Root counters showing the actual number of turns made. A reversing switch, take-up cable drum, and connecting plugs are furnished.

The truck frame is welded steel with four rubber-tired wheels with ball bearings. The guiding trunnion is also fitted with ball bearings and an adjustable position handle. Brakes are provided for locking the truck in position, also torque arms to prevent turning under heavy load. The platform is 30 by 48 in.

The truck is wheeled alongside the floor stand and the shaft connected or placed over the underground valve and connected by universal socket and square shaft. The truck has sufficient capacity to operate gates from 12 to 60 in.

Mathieson Enters Fire Protection Field

The Mathieson Alkali Works, 60 East 42nd St., New York 17, N. Y., is now manufacturing high and low pressure carbon dioxide equipment for the fire protection field, according to an announcement by George W. Dolan, president. The company operates one of the largest carbon dioxide plants in the world at Saltville, Va. Large users of this equipment will find recharging problems simplified by the dry ice liquefier with a capacity of 1,000 lbs. of carbon dioxide recently introduced by the company. Recharging facilities are also available at 16 distribution centers.

Harry Ensminger has been named to head the fire protection department with headquarters at the New York office. Mr. Ensminger has been affiliated with Mathieson since 1945. Before that he was sales manager of the Electronics Division of Federal Telephone and Radio Corp. and before that was sales manager for the Cardox Corp.

Appointments to four newly created sales posts and rearrangement of one New England and two southern sales areas have also been announced.

Harold R. Dinges has been named district sales manager of one of the new southern sales areas and will direct its activities from headquarters at Charlotte, N. C. He has been connected with Mathieson since 1941 and will now supervise sales activities in Virginia, North and South Carolina, and parts of West Virginia and Tennessee.

O. J. Theobald, Jr., a sales representative of the organization since 1932, has been named to assist Mr. Dinges.

Fred O. Tilson is district sales manager of the second newly defined southern area at Chattanooga, Tenn., and will supervise company sales activities in parts of Tennessee, Alabama, and Georgia. Mr. Tilson previously represented Mathieson in varied sales capacities since joining the company in March 1925.

William H. Eastburn will head the newly organized New England sales area as district sales manager and will direct sales activities from headquarters at Providence, R. I. He has been on Mathieson's sales staff since 1932.

Water-Repellent Mildew-Resistant Fire Hose

A new "all-weather" line of water-repellent, mildew-resistant fire hose has just been announced by American-LaFrance-Foamite Corp., Elmira, N. Y. It is being manufactured exclusively for this company by the Goodyear Tire and Rubber Co.

The new "all-weather" is double-jacketed to withstand the abrasive action of gravel, cinders, or rough surfaces. It will withstand extreme temperatures from freezing cold to blistering heat. Both hose jackets are water repellent, and both get a double treatment to insure the thorough impregnation of all the fabric. The edges of the hose are reinforced with special yarns designed to give greatest possible wear at the points most needed.

Pennsalt Names Advertising Manager

Sydney L. W. Lea, recently released from active duty as an army captain, has been named manager of advertising of the Pennsylvania Salt Manufacturing Co. At the same time Anne Hurlbrink was named assistant advertising manager.

Sydney L. W. Lea

Mr. Lea succeeds Mrs. Ethel Serfas Klingman, who is retiring from business. He was assistant to George B. Beitzel, now vice-president in charge of sales, before joining the army in 1940.

At a luncheon given Mrs. Klingman, she was presented with the first of the company's new service pins.

Here's Power
FOR EVERYBODY
INTERNATIONAL
Diesel Tractors
DAM THE TORRENTS! Save our farms and towns from floods. Conserve the soil that rides unbridled rivers. And get the dividend of waterpower—*Power for Everybody!*
This takes hard digging. That's where the earth-moving power of International Diesel Crawler Tractors saves heavy work and cuts construction costs. With unbeatable operating economy they save money. With high efficiency they convert low cost fuel into geared-to-the-ground power. And they keep on working day and night with little attention; digging, lifting, carrying and hauling, tirelessly.
Performance like that is what every construction boss wants—and International Diesels will continue to provide it!
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Tune in—"Harvest of Stars" every Sunday NBC Network. See newspapers for time and station.
International Diesel Tractors and Power Units excel in logging the forests; excavating for construction; building highways and airports; mining minerals, iron, and coal; drilling oil wells; pumping oil or water; operating electric generators, air compressors, mills of many kinds; building and maintaining railroads and powering ships.
INTERNATIONAL
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INTERNATIONAL
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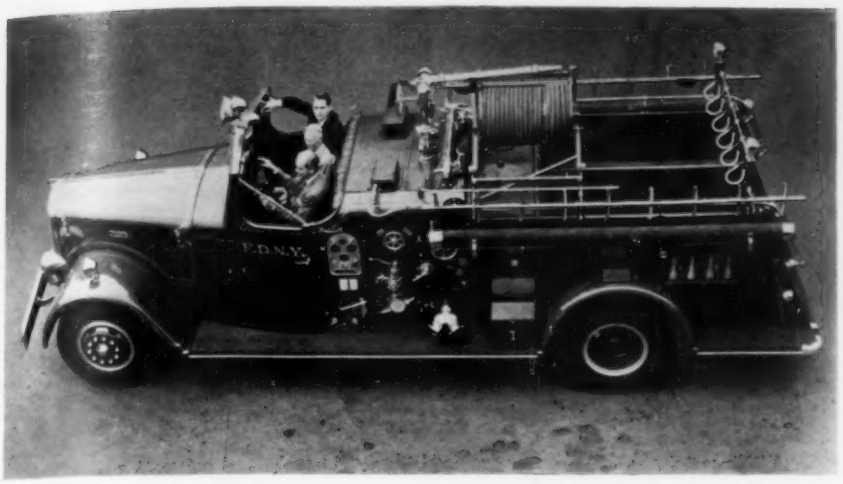
New York City to Get 20 of These Pumpers



This is the first of a fleet of twenty new fire pumpers for New York City. Ralph Horton, president of Great American Industries, Inc., at the wheel, is being shown this Ward LaFrance pumper by A. Ward LaFrance, vice-president of Great American Industries, and Wendell P. Rice, general sales manager of the Ward LaFrance Truck Division, Elmira, N. Y. The six special "subway" hangers at the rear are easier for firemen to hold onto than the customary horizontal bar.

Builders-Providence Forms West Coast Affiliate

Builders-Pacific, Inc., is a newly formed affiliate of Builders Iron Foundry, Providence, R. I., with offices, warehouse and service facilities in San Francisco and Los Angeles, according to a recent announcement. The main office is at 921 University Ave., Berkeley, and the Los Angeles office is at 2085 Belgrave Ave., Huntington Park.

Lee H. Chamberlain

Builders-Pacific will represent the following three affiliates of Builders Iron Foundry: Builders - Providence, Inc., manufacturers of venturi meters and a wide variety of instruments for metering and controlling flow, liquid level, temperature, pressure, and weight; The Omega Machine Co., formerly of Kansas City, Mo., makers of a complete line of volumetric and gravimetric feeders used in water and sewage works, power plants, and industrial plants for handling dry materials or the gravity feeding of liquids; and %Proportioneers, Inc.% (in Northern California), manufacturers of constant rate and flow proportional chemical solution pumps for water and sewage systems, swimming pools, and sanitation services.

Lee H. Chamberlain, long active in machinery and equipment sales on the Pacific Coast, is president and general manager. He will have his headquarters in the San Francisco office but will divide his time between that office and Los Angeles. Harold W. Leeson will handle sales and service in the Los Angeles area and as service manager will have charge of maintenance and repair service throughout the state.

Belt Conveyor Weighing Makes Plant Control Accurate

When solid material is conveyed on a belt, it is not necessary to stop operations in order to weigh it; a Merrick Weightometer will determine its weight, using the moving belt with the variable deflection caused by the load to determine and continually totalize the weight.

The Weightometer has many practical applications, particularly in sewage treatment plants, where it can record the amount of sludge being produced from vacuum filters; in water plants, where it can measure and control the application of chemicals; and in incinerator operation, where it can measure the amount of refuse being delivered to the furnaces.

Bulletin 2643 tells how the Merrick Weightometer operates. This is available either through the Merrick Scale Mfg. Co., Passaic, N. J., or through THE AMERICAN CITY magazine.

Lt. Hudson Joins Consulting Engineering Firm

William Otis Hudson, formerly of New Orleans, is now associated with Freese & Nichols, consulting engineers of Fort Worth, Texas, and will specialize in water and sewage works.

Mr. Hudson received his civil engineering education at Tulane University. He was commissioned in the Navy in June 1941 and served as engineering officer in the submarine service in the Pacific.

EXTENSION Rings

These sturdy and durable cast iron rings adapt 18" and 20" meter box covers to 24", 30" and 36" tile. A convenient item to stock for those occasional large water meter installations. Send for our complete catalog of water meter setting and testing equipment.

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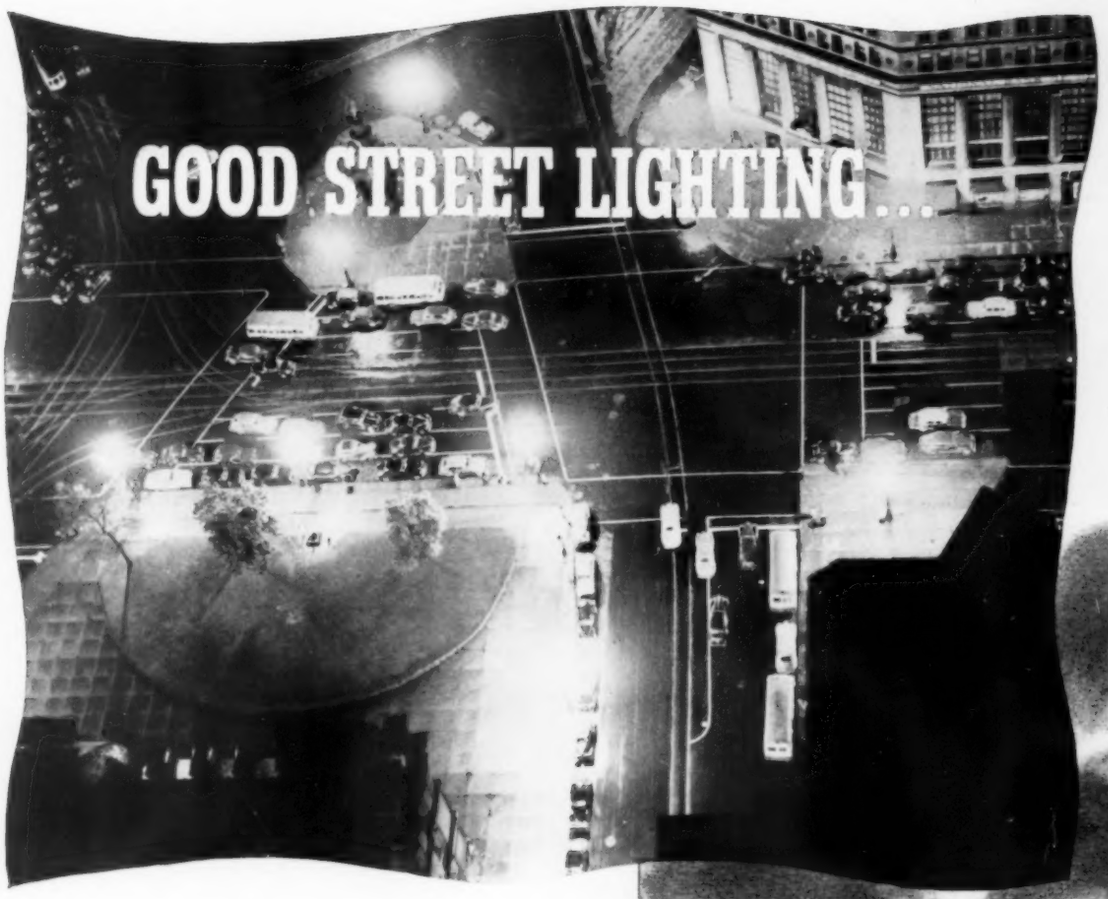


the sign of a good place to live

DETROIT, prior to 1937, reported 75 percent of its night traffic fatalities on only 4.5 percent of its street mileage. Then these fatal stretches were relighted. Night traffic fatalities where modern lighting was in use dropped to 26 percent of the city's total. Was the improvement worth it? Detroit people think so. Today, Detroit is considered one of the best lighted big cities in the country...is proud of its good reputation. The life saving, property improving values of good street lighting can be so easily demonstrated. Is your community realizing all the good from good street lighting?

The Street and Traffic Safety Lighting Bureau, 155 East 44th Street, New York 17, N. Y.

Morse Urges Further Development of Municipal Diesel Market

Municipalities have been leading purchasers of diesel engines and probably will expand their purchases from the electric field to include water and sewage pumping, particularly as sewage gas utilization gains favor, according to Robert H. Morse, Jr., vice-president and general sales manager of the Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill., speaking before the American Society of Mechanical Engineers in Milwaukee recently.

R. H. Morse, Jr.

Mr. Morse stated that today there are between five and six million hp of stationary diesel engines in use in the United States. Of this, 72% is distributed as follows:

Municipal electric plants	27%
Private utilities and REA plants	14%
Oil industry	12%
Cotton gins and oil mills	8%
Grain industry	6%
Ice and refrigeration	5%

The remaining miscellaneous, unclassified 28% is scattered through such industries as mining, rock and clay products, textile mills, lumber and woodworking, irrigation, and metal working.

While municipal electric plants have been absorbing a large percentage of the industry's engine production, Mr. Morse pointed out that not much attention had been given this type of power for water pumping. He pointed to Burlington, Vt., as an example of diesel economy for this task. This city operates a municipal electric plant on cheap and abundant hydro power, but the use of a diesel, operating under the nearly constant load in a water pumping station, is so economical that Burlington pumps water with its diesel engines.

Mr. Morse also pointed to the thousands of new municipal sewage treatment plants now on the drawing boards, and many others due for enlargement and modernization. Here diesel dual-fuel engines, utilizing the waste gases generated in the treatment plants to produce all power required for their operation, will find a ready market.

Mr. Morse urged that more attention be given to the utilization of waste heat. He pointed out that despite developments in engine design we still throw away better than 60 BTU of energy for every 40 that we convert into motive power.

Corrosion Resistant Plastic Films

When corrosion is a problem, whether it is from an acid or an alkaline reaction, Nukemite engineers feel that they have the answer. It is a solution of synthetic resins which dries to form a plastic film which is extremely resistant to such strong acid solutions as sulfuric or hydrochloric acids and strongly corrosive alkalies. It also will resist direct sunlight and severe weather conditions without losing its luster and flexibility. It is similar to a paint or enamel only in application.

Nukemite is produced in black, white, gray, and red. Its coverage will vary between 200 and 230 square feet per gallon according to the temperature and the thickness of the coat desired. It is easily applied by any competent workman, the manufacturers state. No special skill is required. For the best results it should be applied to a sand-blasted surface. If this is impractical, the surface must be dry, neutral, and free from rust, dirt, or grease.

The film can be used to good advantage to protect steel construction, bridges, storage tanks, mixing tanks, and similar structures where excessive corrosion may be expected.

The plastic film is manufactured by Nukem Products Corp., Buffalo 20, N. Y.

In 1945*—PITOMETER Surveys Broke All Records!** ***(58 surveys)

***In 1946*—They're Doing It Again!**

(46 Surveys Completed by Mid-August)

PITOMETER ENGINEERS have never been so essential in all the 50 years that this company has been serving the waterworks field.

There are three reasons why:

1. **Success breeds success:** Many of the current PITOMETER jobs are in communities where Pitometer engineers have previously proved the worth of their services, or in nearby communities that have heard of their efficiency.

2. **Every water works superintendent today knows the importance of water conservation**—the imperative necessity of avoiding leaks; **and they know that a PITOMETER WATER WASTE SURVEY is the answer.**

3. **Many water works superintendents now face decreased revenues** due to postwar conditions, and wish to give special attention to efficient operation to decrease operating costs. And they realize that **the cost of a PITOMETER WATER DISTRIBUTION STUDY is quickly liquidated in the resultant savings.**

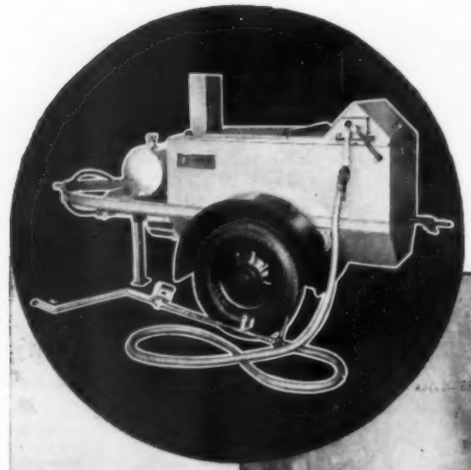
During 1947, PITOMETER Surveys will probably still be breaking all previous records because water works men will wish not only to keep their **present** plant functioning at the highest efficiency, but to learn also **what changes,** if any, will be needed to meet **future** demands.

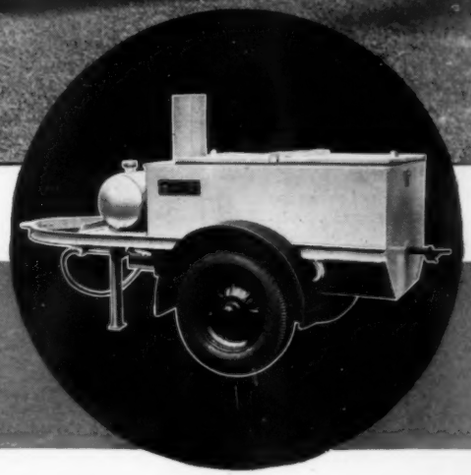
THE PITOMETER COMPANY

Water Distribution Engineers

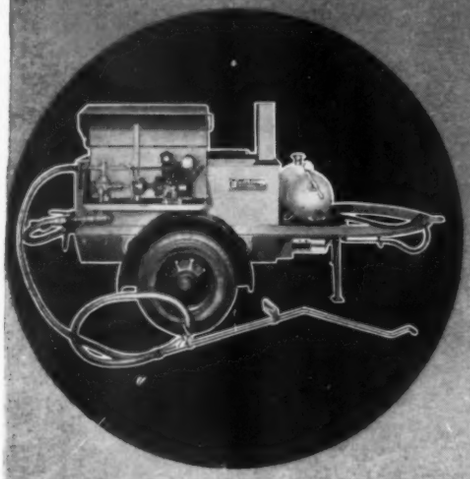
50 CHURCH STREET • NEW YORK 7, N. Y.

THE 84-HD IS THE ANSWER TO PERMANENT STREET REPAIRS





Top Circle—84-HD with Hand Spray Attachment.
Center Circle—Standard 84-HD without Spray Attachment.
Lower Circle—84-HD with Motor Spray Attachment.



When it comes to making permanent Road Repairs, the job cannot be complete without an 84-HD Kettle. This Littleford Kettle is the fastest heating Asphalt Kettle available today; in addition, it cuts the cost of operation. It has two patented features that do just that, "Double Heat Circulation" and "Screened Reservoir."

"Double Heat Circulation" system utilizes all the heat from the burner—none is wasted.

"Screened Reservoir" keeps a continuous flow of material always available—no waiting for material.

For applying Asphalt to those worn out roads or surface cuts, the 84-HD will do the job—will make the repairs permanent. For Better Roads — use the Best in Equipment — Littleford Black-Top Road Equipment.

BLACK TOP ROAD MAINTENANCE EQUIPMENT
LB
SINCE · 1900

LITTLEFORD

LITTLEFORD BROS., Inc.

500 E. PEARL ST., CINCINNATI 2, OHIO

Post-War Concrete Vibrator

This FS-7A vibrator is being used for placing concrete in cribbing and piling in Evanston, Ill., near the Northwestern University campus. This concrete cribbing was installed along the lakefront in considerable quantity.

Among the types of equipment that have improved concrete placement and have become a part of concrete construction practice is the vibrator. And among the most recent of these is the Model FS-7A vibrator produced by the Electric Tamper and Equipment Co., Ludington, Mich.

This unit is small, easily handled, but, nevertheless, powerful. Tested to meet wartime specifications, it is always under complete control of the operator. The motor weighs only 28 lbs., yet drives the vibrator head at 7,000 to 10,000 vpm, dependent upon the length of the shaft and consistency of the concrete.

The vibrator is able to accommodate the usual grinding and drilling accessories.

Marmon-Herrington Co. Elects New Directors

David M. Klausmeyer, C. Alfred Campbell, Guy C. Dixon, and Earl J. Breech were elected to the board of directors of the Marmon-Herrington Co., Indianapolis, Ind., at a recent meeting of the stockholders, according to an announcement by Arthur W. Herrington, chairman of the board of directors.

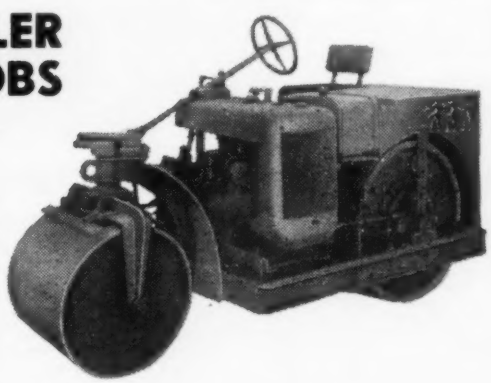
Mr. Klausmeyer recently joined the organization, succeeding Bert Dingley as president, after 22 years with the Chevrolet Division of General Motors Corporation. Mr. Campbell and Mr. Dixon have been associated with Marmon-Herrington for a number of years and are vice-president and treasurer respectively. Mr. Breech is general manager and treasurer of the Merz Engineering Co., Indianapolis, a wholly-owned Marmon-Herrington subsidiary. All four men have been associated with the automotive industry for many years.

The Marmon-Herrington Company is now swinging into production on its post-war products, which include, in addition to its heavy-duty all-wheel-drive converted Ford trucks, a front-wheel-drive delivery vehicle, known as the DeliVr-all, and a line of new and improved trolley coaches for improved public transit.

A TOUGH ROLLER FOR TOUGH JOBS

Pierce-Bear 3½-5 Tons, Variable Weights

Engineered for economical operation where the going is tough. Compact, easy to operate. Rear roller gives heavy duty compression. Built-in water tanks for wet rolling. Powered with Allis-Chalmers Industrial Heavy Duty Model "B" gasoline engine. Write for details.

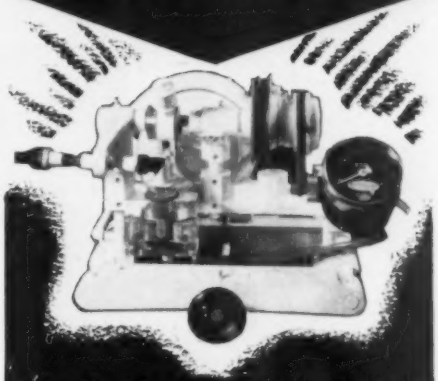


Manufactured by

LEWIS MANUFACTURING COMPANY

415-431 Hoefgen Ave. SAN ANTONIO 6, TEXAS Phone Garfield 6137 or 8931

IT'S THE *Combination* THAT COUNTS!



Only Var-I-Feeder combines 1 — Tachometer count, 2 — variable speed drive, 3 — high injection rate.

Any chemical feed pump can be stepped up to high speed, though on most feeders revision of check valves or other changes are necessary to feed at hundreds of strokes per minute.

Any chemical feeder can be improved by augmenting stroke length adjustment by a variable speed drive or variable pitch pulleys.

Any chemical pump can have an indicating Tachometer added for continuous observation of speed.

But only Var-I-Feeder offers this combination, in which feed is controlled by speed, and measured by the indicating Tachometer. Speed changes on Var-I-Feeder are achieved easily and quickly without stopping the process, by a turn of the fingertip control wheel. Turn the wheel and watch the tachometer. Measured speed measures feed.

VAR-I-FEEDER *is the chemical feeder that counts.*

Send for free bulletins VARI and Add-A-Feeder 91.

VAR-I-FEEDER

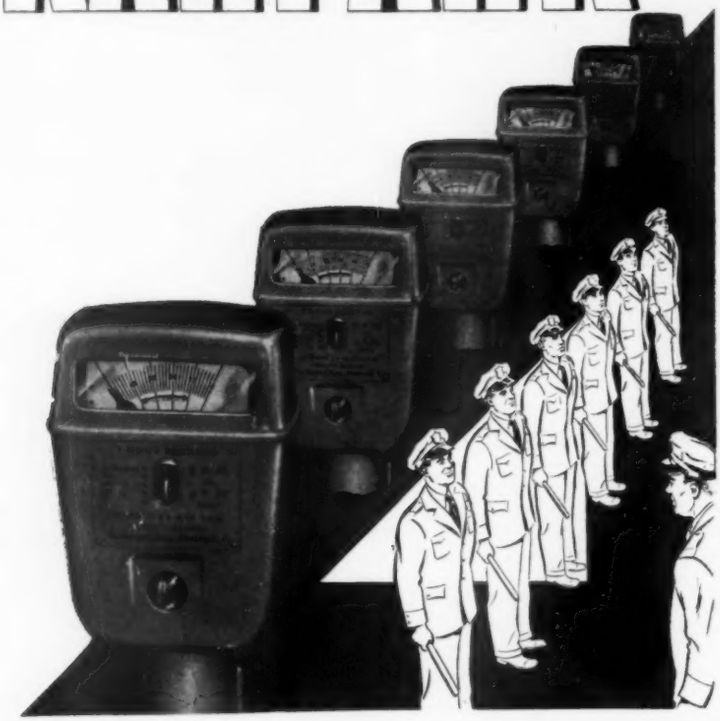
FOR ACCURATE CHEMICAL FEEDING
CHEMICAL WATER TREATMENT
CHLORINE DIOXIDE PROCESS
FOR TASTE AND ODOR CONTROL

CHEMICAL FEEDERS DIVISION
MORSE BOULGER DESTRUCTOR CO.
NEW YORK 17, N. Y.

Room 1700 F. 205 East 42nd Street

Representatives in all principal cities
Equipment Makers and Proportioning Engineers

KARPARK MAKES A HANDSOME SHOWING



Lined up on the streets, KARPARKS present a trim, efficient appearance that reflects a well managed, progressive city. From the round cornered top of its steel housing, to the bottom of its extra strong standard there is modern, functional design in every smooth line of the KARPARK. Behind its neat, battleship gray exterior there is automatic performance and thorough dependability that win nods of approval from the public, from motorists, from police and city officials. Write for data about all of its outstanding features. Know why KARPARK is the wise choice.

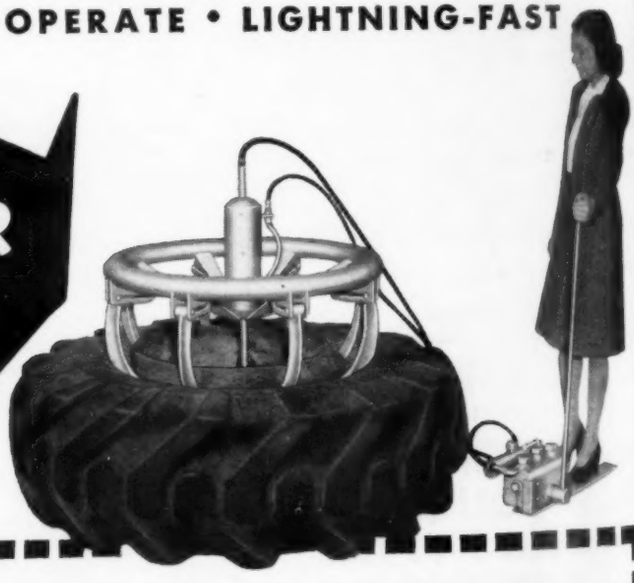
KARPARK *Automatics*

KARPARK CORPORATION, CINCINNATI 6, OHIO

KARPARKS ARE MANUFACTURED BY THE HERSCHEDE HALL CLOCK CO.

AMAZING POWER • EASY TO OPERATE • LIGHTNING-FAST

PRESTO HYDRAULIC DEMOUNTER



1. Develops and withstands pressures in excess of 60,000 pounds.
2. Demounts sizes from 7.00-15 to 24.00-24 without damage to tire, tube, wheel or rim.
3. No tire too small, too large or too tough.
4. Small, light, portable . . . all-steel construction.
5. High pressure double-acting hydraulic cylinder and pump.

All parts carry a one-year guarantee.

$295 NET F.O.B. PAWTUCKET, R. I.
IMMEDIATE DELIVERY
MONEY-BACK GUARANTEE

Order NOW from any authorized distributor or

LEE ENGINEERING CO.
PAWTUCKET, RHODE ISLAND

LEE ENGINEERING COMPANY • Pawtucket, R. I.

Send complete information on the new Presto Model B Demounter.

NAME.....

STREET AND NO.....

CITY..... ZONE..... STATE.....

New Hydraulic Bulldozer for Small Tractors

Oliver's new hydraulic bulldozer for small tractors.

A new small hydraulic bulldozer called the "Imp" has been announced by the Industrial Division of the Oliver Corp., Cleveland, Ohio. This is front-mounted, which leaves the rear of the tractor free for installation of other equipment. It is simple to install and easily transported from job to job. Lifting; lowering, floating, and hold positions are all hydraulically controlled from a single lever. The bulldozer has a reversible cutting edge, rigid moldboard and push arms, and is so constructed that the underframe mounting allows for a minimum width of cut. All thrusts are transmitted to the draw bar connections.

When combined with an Oliver Cletrac Model HG-42, a small crawler tractor with a gage of 42 in. from center to center of tracks and developing 18 draw bar hp, the "Imp" is ideal for work that formerly required hand labor or larger, more expensive tractor-bulldozer. Its light weight and positive traction enable it to operate effectively on soft terrain and get into places where heretofore this type of equipment was unable to function.

American Well Works Appoints New Vice-President

Alvin Haas has been appointed vice-president and general manager of The American Well Works, Aurora, Ill., according to an announcement by I. G. Grawoig, president of the company.

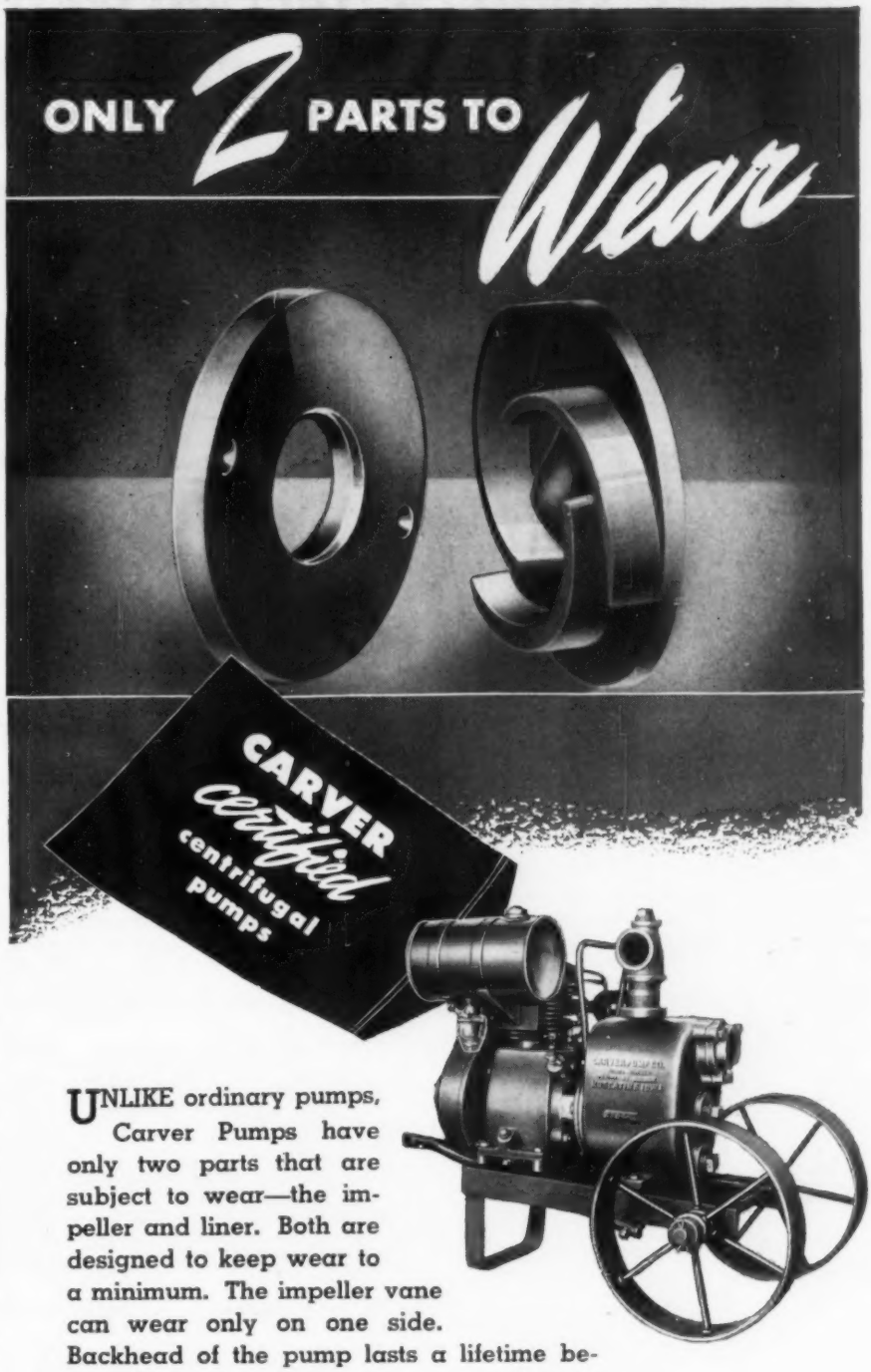
Mr. Haas comes to this company after 15 years as general manager of the Yates American Machinery Corporation.

The American Well Works has appointed the Henry H. Teplitz Advertising Agency, Chicago, Ill., as advertising counsel, according to President Grawoig.

A substantial advertising and public relations program is being planned to tell the complete story of what the company has to offer in the way of pumping and sewage equipment.

This appointment is part of the expansion and development program of The American Well Works, engineers and manufacturers of pumping, sewage treatment, and water purification equipment since 1868.

HERE'S ANOTHER REASON WHY CARVER PUMPS ARE BETTER



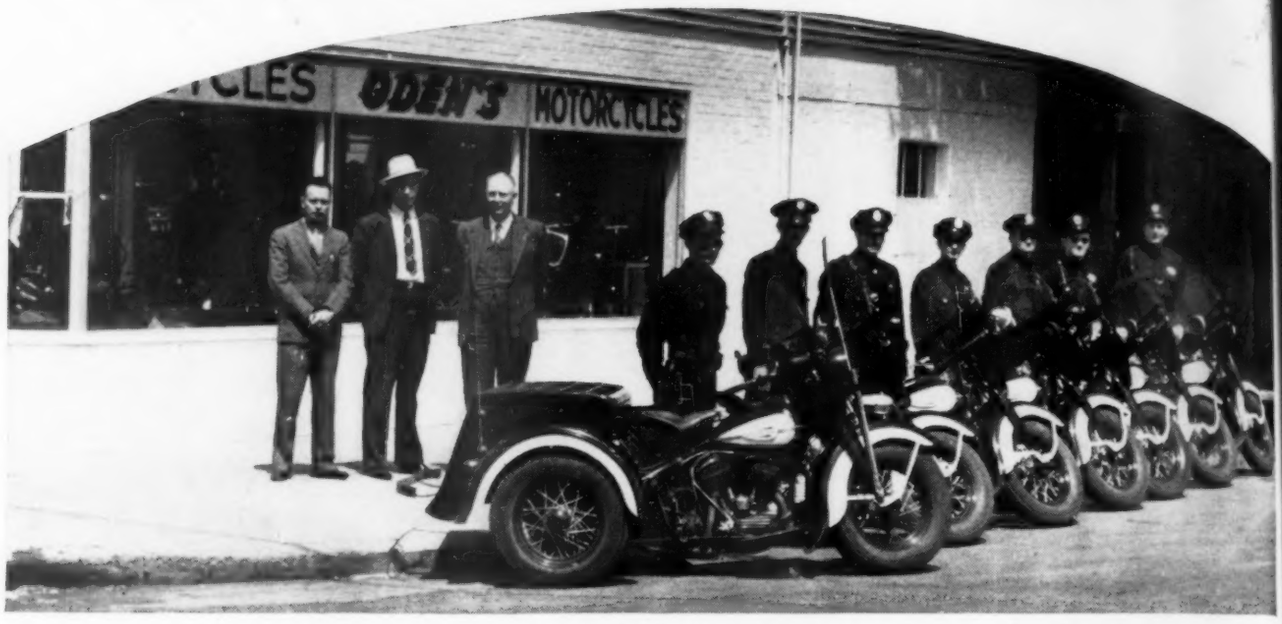
UNLIKE ordinary pumps, Carver Pumps have only two parts that are subject to wear—the impeller and liner. Both are designed to keep wear to a minimum. The impeller vane can wear only on one side. Backhead of the pump lasts a lifetime because impeller does not wear against it. When wear eventually occurs in the impeller and liner, they can be replaced easily, quickly and at low cost. thus making the pump as good as new.

Carver Pumps are offered with a choice of power and mounting in sizes from 1½" to 10". *Write for catalog.*

CPC CUTS PUMPING COSTS

CARVER PUMP CO.
Muscatine, Iowa

Meet Today's Increased Traffic Problems with HARLEY-DAVIDSON MOTORCYCLES

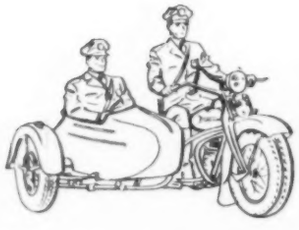


Using Harley-Davidson Motorcycles exclusively, the Police Department of Reno is carrying on an extensive program of traffic control and accident prevention. Shown with the Reno motorcycle squadron are the Harley-Davidson dealer, E. R. Oden, Captain Ted Berrum of the Traffic Division, and A. J. Goodwin.

IN Reno, Nevada — as in many American cities of every size — police departments are using Harley-Davidson Police Motorcycles and Servi-Cars in a nationwide program of traffic control and accident prevention. Thus police manpower is made more effective in coping with the astounding upsurge of traffic accidents and resultant fatalities.

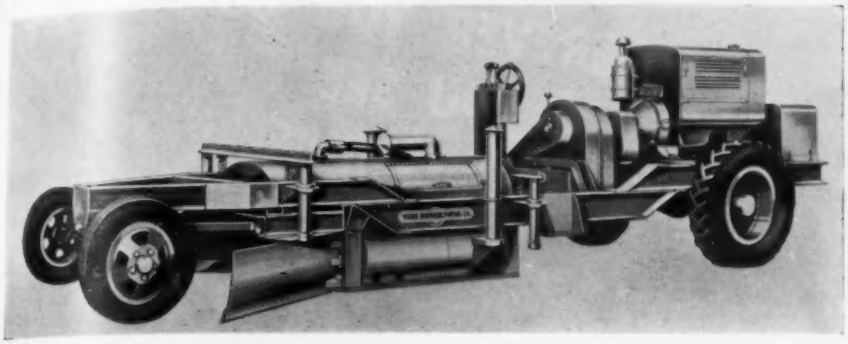
With the *need* for accident prevention greater than ever before — dependable, efficient Harley-Davidson Motorcycles and Servi-Cars are the best investments in safety any city, large or small, can have. Meet YOUR increased traffic problems with Harley-Davidsons — no other method can match them for dealing with accidents *before* they occur. Call in your dealer and have him explain the advantages of Harley-Davidsons in traffic control work—also for greater efficiency in handling many other police duties.

HARLEY-DAVIDSON MOTOR CO., Milwaukee 1, Wisconsin



HARLEY-DAVIDSON
Police Motorcycles

New Traveling Mixing Plant



This is the Wood Roadmixer model 36, a self-propelled pneumatic tire-mounted traveling mixing plant. It handles up to 4-cu. ft. windrows and produces 100 to 150 tons of mix per hour.

The Wood Roadmixer model 36, a self-propelled, pneumatic tire-mounted traveling mixing plant, is the latest addition to the line of road building equipment manufactured by Wood Manufacturing Co., 6900 Tugunga Ave., Box 620, North Hollywood. Calif. It is suitable for small jobs and yet has sufficient capacity for large ones. It handles soil cement, tar, cutback asphalts, and emulsified asphalts, making a thorough mix in one pass. This machine handles up to 4-cu.-ft. windrows and produces from 100 to 150 tons of ready-to-spread mix per hour.

One of its outstanding features is its maneuverability in small areas. The machine is handled as easily as a motor patrol, with a range of 5 speeds from 2 to 14 mph, forward or reverse. Being fully rubber mounted, it does not damage pavements, yet has sufficient traction for all normal operating conditions. The 14-mph road speed increases the number of jobs on which this new traveling mixing plant can be used economically and efficiently.

The power of the engine is efficiently utilized in traction and mixing action. It controls the tractive effort and provides the power for the mixing drum and for the liquid binder pump and hydraulic system.

Contractors, state, county, and municipal engineers will find it particularly adaptable to small jobs, such as shoulders, patching, parking areas, and detours as well as road maintenance and general surfacing construction.

A new 4-page bulletin 36 gives complete specifications with illustrations of the self-propelled roadmixer.

Microfilming Done for You

York Microstat Corp. has moved from its former New York address to larger international headquarters at 132 West 43 St., New York 18, N. Y.

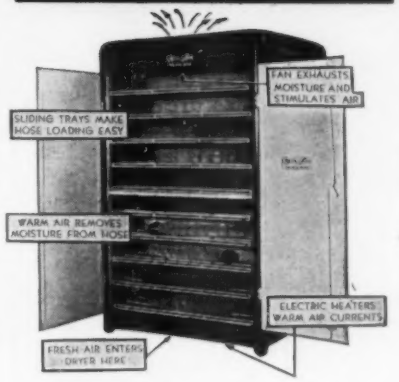
This organization will set up a precision camera in your office and make microfilm negatives of records on the spot. Any number of positive prints can be made at high speed in the Microstat plants located from coast to coast. Finished film is indexed and delivered in metal cartridges, then inspected and sealed by the proper city official, who stores the negative film in a safe deposit vault. Positive film, read in reading machines or projected, and Microstat enlargements are delivered for use.

An important feature of the service is an insurance policy that goes with it. This guarantees that in case of destruction of the records, they shall be replaced by original size paper prints without cost. These records usually consist of tax records, deeds, maps, birth certificates, police identification records, engineering drawings. A drawing 24 by 36 in. can be photographically compressed in a single operation on one Microfilm-by-Microstat frame as an image 1 x 1⅜ inches.

CIRCUL-AIR

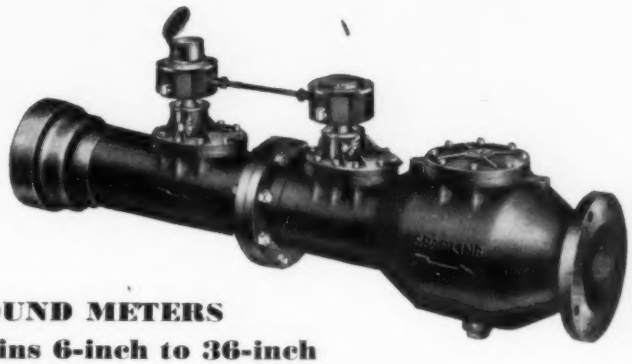
FIRE HOSE DRYER

- Is easier to use
- Saves drying time
- Reduces hose stretch
- Prevents mildew and rot
- Improves building design
- Air-conditions as it dries


FAN EXHAUSTS MOISTURE AND STIMULATES AIR
SLIDING TRAYS MAKE HOSE LOADING EASY
WARM AIR REMOVES MOISTURE FROM HOSE
ELECTRIC HEATERS WARM AIR CURRENTS
FRESH AIR ENTERS DRYER HERE

The CIRCUL-*AIR* CORP.
575 E. Milwaukee Street
DETROIT 2 MICHIGAN

SPARLING MAIN-LINE METERS



COMPOUND METERS
For Mains 6-inch to 36-inch

Consistent accuracy is assured over a range of flows as wide as 1 to 125, with head loss the lowest of any compound meter. One totalizer registers from both meter units.

Bulletin 309 comes upon request.

R. W. SPARLING

Manufacturer of Water Measuring Equipment

LOS ANGELES 54. Box 3277 Terminal Annex — 622 Broadway ..... CINCINNATI 2
CHICAGO 16 ..... 3104 South Michigan Ave. — 101 Park Avenue ..... NEW YORK 17
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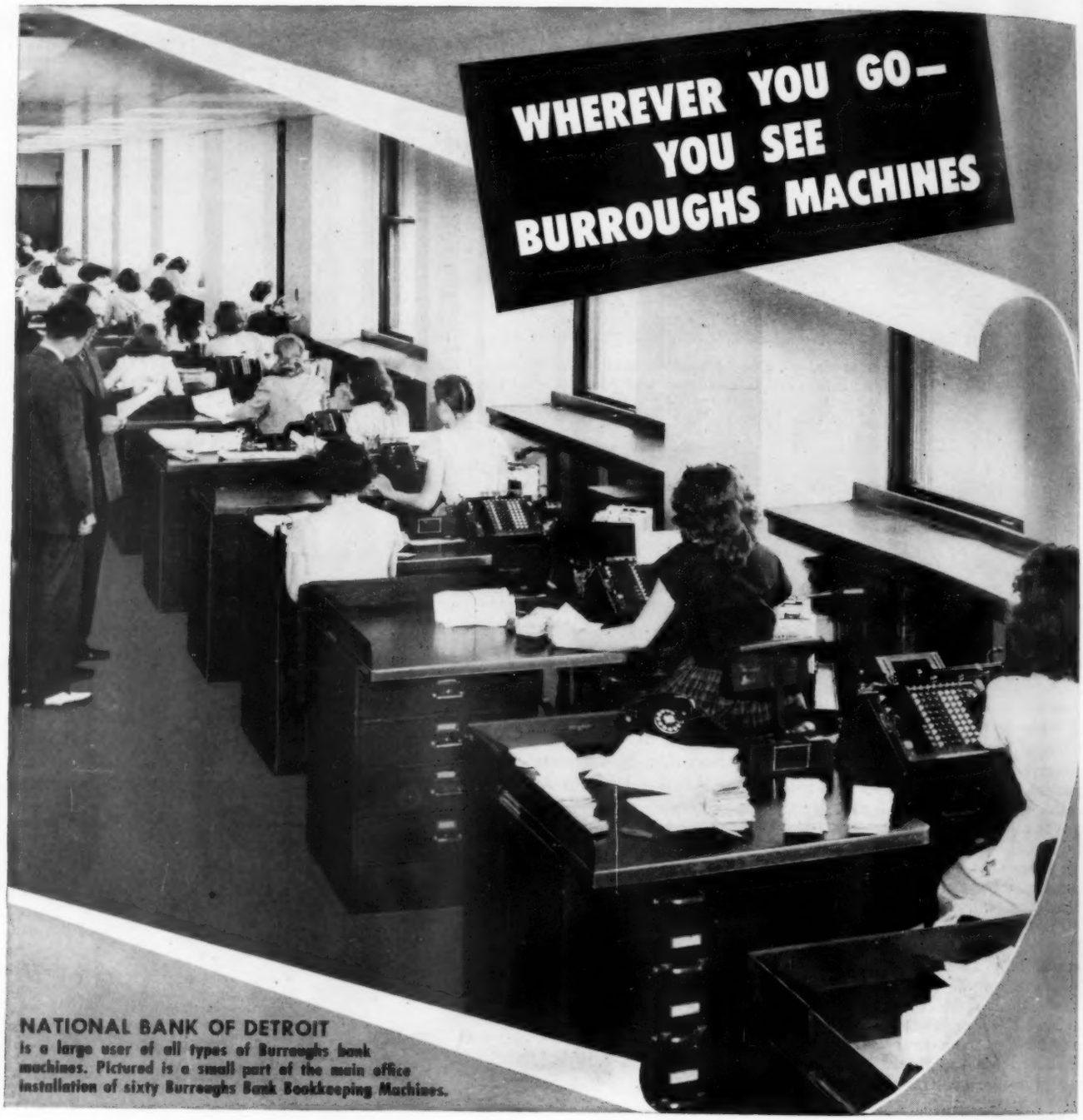


NATIONAL BANK OF DETROIT
is a large user of all types of Burroughs bank machines. Pictured is a small part of the main office installation of sixty Burroughs Bank Bookkeeping Machines.

There is a good reason why so many timesaving, labor-saving features appear first . . . or exclusively . . . on Burroughs products. Burroughs specialists, working daily with men in every line of business, acquire an insight into future figuring and accounting needs. They plan machines to meet these needs efficiently and economically —making full use of the latest scientific equipment in Burroughs' physical, chemical and electronic laboratories . . . the advanced ideas of experts in machine design and styling . . . and long experience in building for a wide range of office requirements.

Forward thinking and planning—made effective by the finest in research and manufacturing facilities—explain why you see Burroughs machines wherever you go.

1st Burroughs
IN MACHINES
IN COUNSEL
IN SERVICE

BURROUGHS ADDING MACHINE COMPANY · DETROIT 32, MICHIGAN

FIGURING, ACCOUNTING, STATISTICAL AND CASH REGISTERING MACHINES · NATIONWIDE MAINTENANCE SERVICE · MACHINE SUPPLIES

Portland Cement Assn. Expands Research Facilities

Plans for expansion of its research and development activities in the fields of portland cement, concrete, and their application to engineering use have been announced by the Portland Cement Association, 33 W. Grand Ave., Chicago 10, Ill., through Frank T. Sheets, its president.

A. Allan Bates

Member companies have formally adopted by-law amendments setting aside a substantial part of the association's yearly income to be used solely for research and development work. This step assures financing and continuity of this expanded program.

To improve administrative direction and intensify the attack on research and development problems, it was decided that all activities would be handled through a newly created Division of Research and Development to be administered by a vice-president who will be responsible only to the president. Dr. A. Allan Bates was elected vice-president for research and development to fill the post. Dr. Bates is widely known for his accomplishments in the fields of chemistry, chemical engineering, ceramics, and metallurgy. Since 1938 he has been manager of the chemical, metallurgical, and ceramic research division of Westinghouse Electric Corporation.

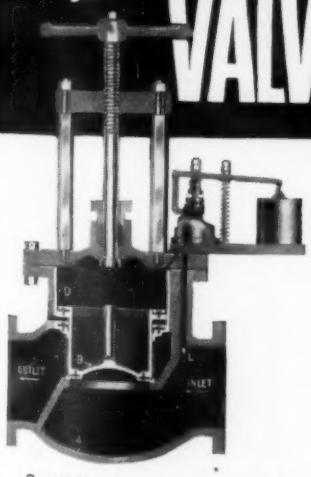
Caterpillar to Maintain Present Price Levels

The Caterpillar Tractor Co., Peoria, Ill., announced when OPA expired that it intended to maintain its price level despite the termination of governmental controls. This policy was made public by L. B. Neumiller, the company's president, in an open letter written to all dealers.

In his letter, Mr. Neumiller stated that since 1925, when the company was established, its fixed policy has been to build better products and to sell them at the lowest possible prices to a steadily increasing number of satisfied users.

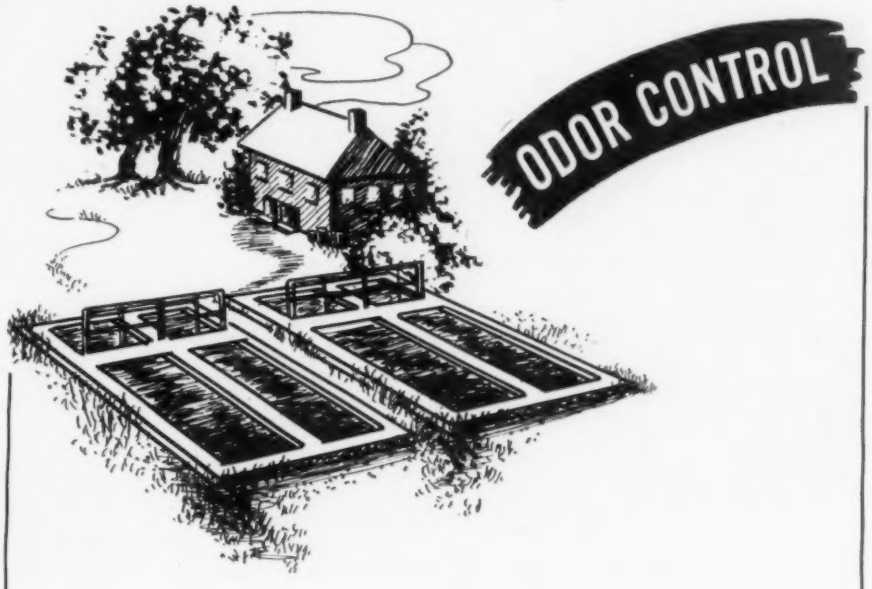
"The Caterpillar Tractor Co. is pleased to state that it is maintaining present prices and will continue diligently to devote its full energies toward the fulfillment of its time-proven policy."

GOLDEN-ANDERSON
ELECTRIC and MANUAL
WATER SERVICE
VALVES



Suitable for any spray service requirement or for remote electrical control. Instant manual or automatic operation. For any high or low pressure water service valve need—get the facts from Golden-Anderson. Over 1500 standard types and sizes.

GA
GOLDEN-ANDERSON
VALVE Specialty Company
PITTSBURGH 22, PA.



Ozone IN AMPLE CAPACITIES
FOR ODOR REMOVAL

The problem of controlling and abating odor nuisance is a common one. Ozone has recently been applied in its solution. Large quantities of foul-smelling sewage gases are treated with ozonized air and the odors are completely destroyed. Ozone has long been used for removing unpleasant tastes and odors from potable water supplies.

Ozone plants capable of producing any quantity of ozone at moderate cost are now available. Write for complete information.

E WELSBACH

OZONE PROCESSES
INCORPORATED
1500 WALNUT ST., PHILADELPHIA 2
A wholly owned subsidiary of Welsbach Engineering and Management Corporation

The New Underwood is here...

...with the Rhythm Touch!

Sit down to this handsome new typewriter . . . for the typing thrill of your life!

You sense something different the moment your fingers touch the keys. It's ***Rhythm*** Touch . . . the latest development in Underwood's constant research to help make your work easier.

There's new ease for your fingers in the lightning response of every key. In the better balanced finger action. The effortless speed. The free-and-easy rhythm of the accurate, smooth-running mechanism.

You'll do more work . . . better work . . . with less fatigue. Besides ***Rhythm*** Touch, and many other new refinements, you have all the time- and effort-saving Underwood features you've always enjoyed.

Insist on having this new Underwood Standard Typewriter. It's a pleasure to work with . . . a treasure to own.

UNDERWOOD CORPORATION . . . One Park Avenue, New York 16, N. Y.

Underwood TYPEWRITER LEADER OF THE WORLD

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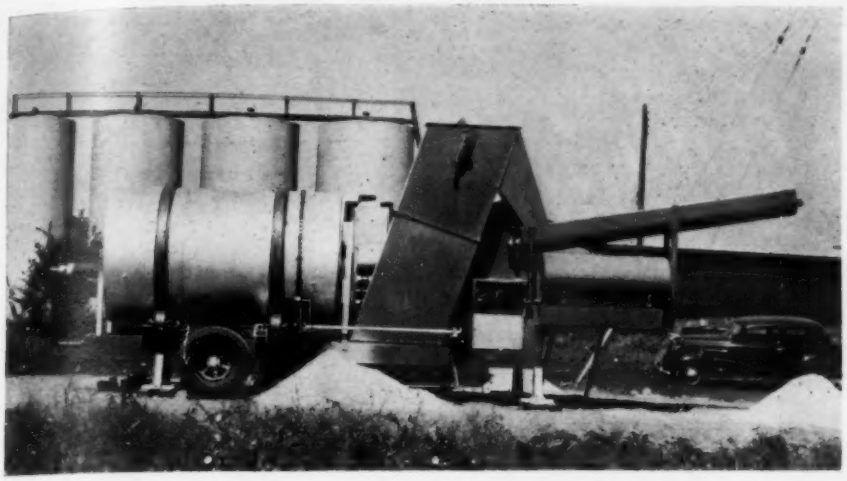
Portable Asphalt Plant Aids Street Improvements



This complete portable asphalt plant can be operated by one person and moved by any commercial tractor having a fifth wheel. Its capacity is 20 to 40 tons per hour.

A new portable asphalt plant complete in its own framework is manufactured by the Komb Drier Co., Marion, Ind. This streamlined, compact plant can be operated by one person. It can be moved by any commercial tractor which has a fifth wheel. Capacity of plant is 20 to 40 tons per hour. The aggregate goes in at the front of the drier, passes through the inside cone, then back to the front of the drier, where the elevator picks it up and then dumps it into the mixing chamber.

The aggregate is fed from reciprocating feeder plates, one for sand, the other for stone, and any given amount of each can be controlled to meet the engineer's specifications. All moving parts are synchronized with one another, with the exception of the asphalt pump, which is set by a chart. This portable asphalt plant is suitable for municipal and county purposes.

Roots-Connersville Elects New Vice-President

Ralph R. Newquist has been elected vice-president in charge of sales of Roots-Connersville Blower Corp., Connersville, Ind., one of the Dresser Industries.

R. R. Newquist

A graduate of Pennsylvania State College, Mr. Newquist has been successively employed by the Reliance Electric & Engineering Company, the Louis Allis Company, and Allis-Chalmers Mfg. Co. He is a member of A.I.E.E., the Society of Naval Engineers, and the American Society of Naval Architecture and Marine Engineering.

Lewis Announces Business Change

The H. W. Lewis Equipment Co., 415 Hoefgen Ave., San Antonio, Texas, manufacturers of the Pierce-Bear variable weight roller, announces that the manufacturing phase of its business has been incorporated under the name of Lewis Manufacturing Co. and will continue at the same address.

SMOLENSKY VALVES

■ The Smolensky Radialflow Noiseless Check Valve eliminates water hammer, which assures operating efficiency and noiseless operation.

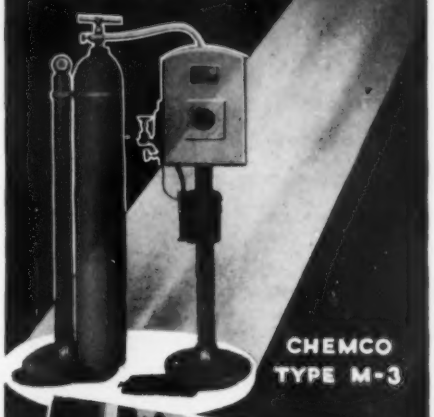
Designed to be constructed with a cast iron body, plug, spider, and made with a renewal bronze valve seat or seat of other metal when required.

Specify Smolensky Valves for your water works plant and assure yourself years of trouble-free service.

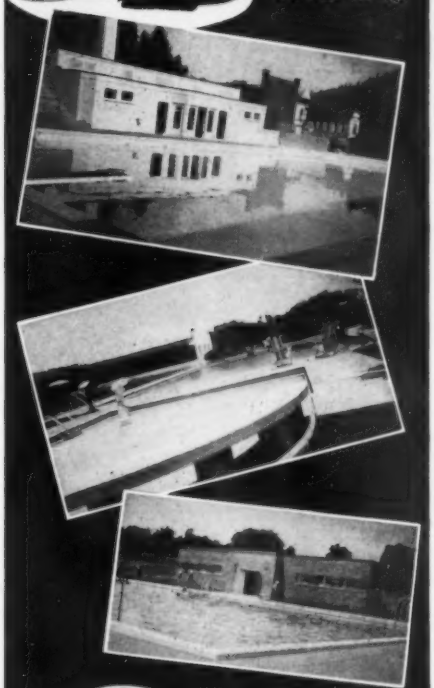
Economy—Durability

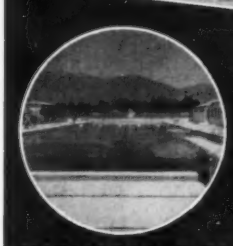
THE SMOLENSKY VALVE CO.
940 BROADWAY, BEDFORD, OHIO

For QUALITY SWIMMING POOL EQUIPMENT Specify CHEMCO



CHEMCO TYPE M-3





OTHER "CHEMCO" PRODUCTS
FILTERS
WATER SOFTENERS
HYDROGEN ION PLANTS
COMPLETE PURIFICATION SYSTEMS
FOR SWIMMING POOLS ETC.

CHEMICAL EQUIPMENT CO.
MAIN OFFICE · LABORATORY · FACTORY
223 CENTER ST. · LOS ANGELES 54 · CALIF
MID-WEST FACTORY BRANCH
303 W. WACKER DR. · CHICAGO · ILL.
REPRESENTATIVES IN PRINCIPAL CITIES

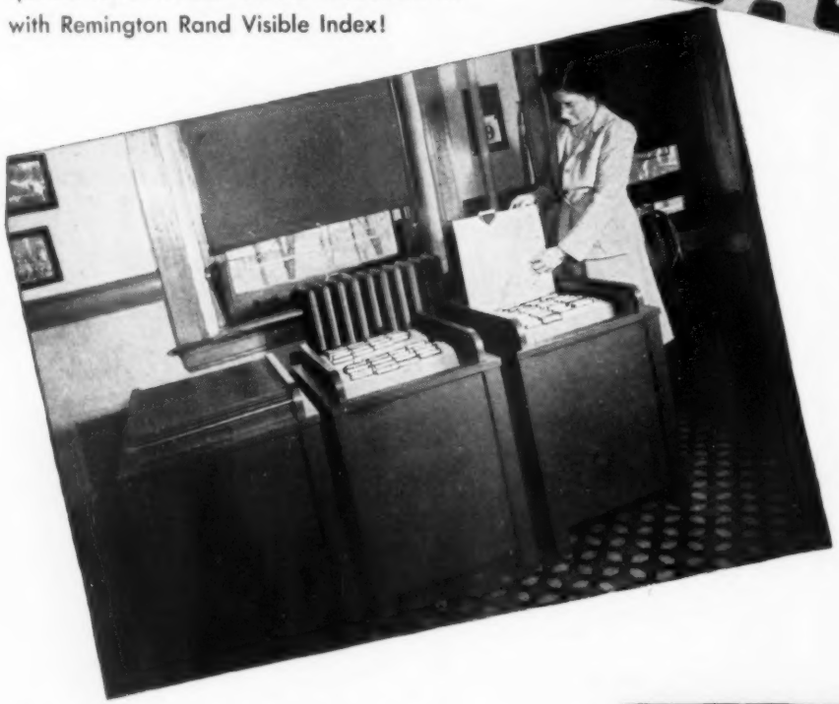
Here's a Better way to maintain Poll Lists

Lists are always up-to-date. That's why progressive election officials everywhere are using Index Visible Flexo Panels for maintaining lists of registered voters!

Faster . . . Less Expensive . . . More Accurate

Typewritten die-cut cards are filed by street and number on district or precinct panels. Old cards are quickly removed, new ones inserted without changing the sequence of other cards on the panel. Instantly ready for photographing and fast, low-cost reproduction by photolith process.

Copywriting, typesetting, proofreading are "out" with the Index Visible Flexo way! Cuts down errors, costs, time and office space required. Take Poll Lists off the "headache list" with Remington Rand Visible Index!



Flexo Panel Trays used by Du Page County, Wheaton, Ill. Twenty counties in Illinois alone have installed this economical, efficient system of voters' registration lists.

"Now! The Modern Way"— illustrated folder containing complete description of the efficient Visible Index System for Voters' Registration Lists, will be sent to you on request. Just call your nearest Remington Rand Branch Office for a copy of KD 295, or write to us in New York.

SYSTEMS DIVISION

Remington Rand

315 FOURTH AVENUE • NEW YORK 10 • N. Y.

Fricker Returns to Le Roi

D. E. Fricker has returned to Le Roi Co., Milwaukee 14, Wis., manufacturers of gasoline engines, air compressors, and engine-generator sets, after more than 2½ years in the army. As assistant to the advertising manager he will handle sales promotion work and trade shows. Before he entered the service Mr. Fricker carried on the company's advertising.

D. E. Fricker

In the infantry when the war ended, he was transferred to special service to participate in a soldier show and to serve as its publicity director. Following this, he became a theatrical technician with USO Camp Shows, Inc., and later, administrative non-commissioned officer in the southern Italy area special service section.

New Headquarters for Anthracite Equipment Corp.

The main office of the Anthracite Equipment Corp. has been moved from New York to the new Anthracite Institute Building, Wilkes-Barre, Pa. The company will continue to have a branch office at 101 Park Ave., New York City.

The Palmer Filter Equipment Co., 822 E. 8 St., Erie, Pa., will continue as sales and engineering consultants for Anthrafilt.

New System of Air Compressor Installation

One of Davey's new "departmental" compressors designed for individual departments replacing large central compressor systems.

Paul H. Davey, President, Davey Compressor Co., Kent, Ohio, has announced the production of a new line of industrial "departmental" compressors available in 60, 105, 160, 210, and 315 c.f.m. sizes, and designed for installation in individual plant departments as replacements for large central compressor systems.

Mr. Davey also outlined a new plan for industrial air compressor installations: the departmental system, whereby a separate compressor of proper capacity operating independently is installed in each department. Several units are connected, however, to provide a power reserve for overpeak loads or to maintain service in case of breakdowns.

The advantages and savings inherent in the departmental system were listed by Mr. Davey as follows: it eliminates pressure losses common to long distance "piping" of air and requires less power to "push" air from compressor to job; the compressors work only when individual departments need air; the system permits adjustment of the pressure and air supply to the exact point of efficiency for each job; it can be easily expanded by adding another unit; it eliminates shutdowns due to central compressor failure; it eliminates need for emergency standby compressors; it permits use of air-cooled instead of water-cooled units and cuts repair costs, since the departmental units are mass produced and parts are readily available.

Mr. Davey also stated that an outmoded compressor arrangement can gradually be converted over a period of time to a modern departmental system.

CEMENT GUN COMPANY
"GUNITE" CONTRACTORS
GENERAL OFFICES—ALLENTOWN, PENNA., U.S.A.

PRE-STRESSED "GUNITE" TANK

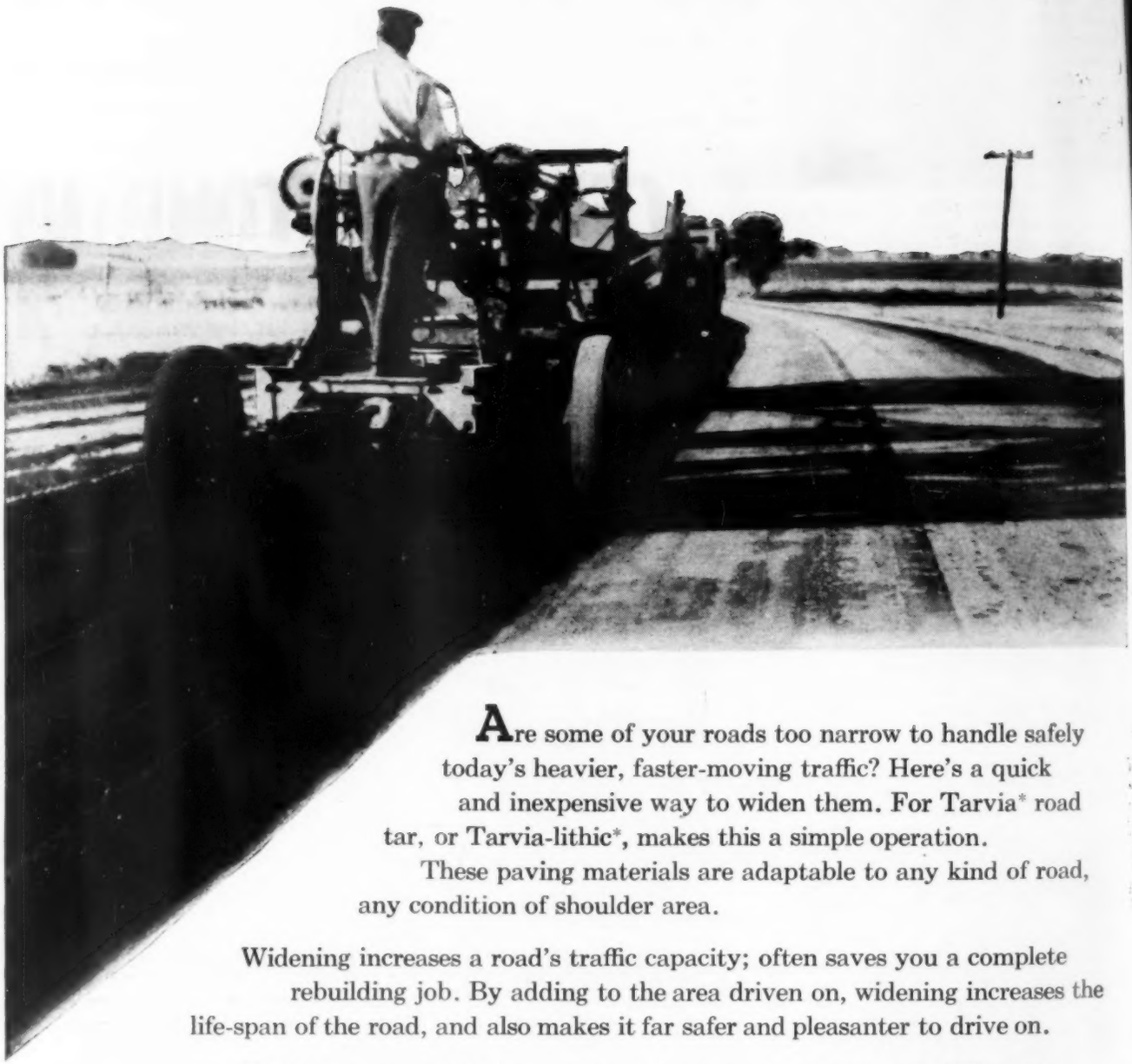
The million gallon tank shown above was built by us in 1944. The "GUNITE" wall and dome roof of this tank were pre-stressed which insures a bottle-tight, crack free structure. We have designed and built scores of pre-stressed "GUNITE" tanks and standpipes.

Our bulletin D2300 describes this type of work and hundreds of other uses of "GUNITE." A copy of this bulletin is free for the asking.

MANUFACTURERS OF THE "CEMENT GUN"

INCINERATION ENGINEERS
NICHOLS ENGINEERING & RESEARCH CORPORATION
60 WALL TOWER NEW YORK, N. Y.
Consultants • Designers • Constructors

A FEW FEET WIDER
MEANS MANY YEARS LONGER



Are some of your roads too narrow to handle safely today's heavier, faster-moving traffic? Here's a quick and inexpensive way to widen them. For Tarvia* road tar, or Tarvia-lithic*, makes this a simple operation.

These paving materials are adaptable to any kind of road, any condition of shoulder area.

Widening increases a road's traffic capacity; often saves you a complete rebuilding job. By adding to the area driven on, widening increases the life-span of the road, and also makes it far safer and pleasanter to drive on.

Thriving communities have a way of outgrowing their roads. Why not check yours? The Tarvia field man will be glad to work with you.

THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N.Y.

Barrett Tarvia*
* Reg. U. S. Pat. Off.

New York • Chicago • Birmingham • Detroit • Philadelphia • Boston • Rochester • Cleveland Columbus • Youngstown • Ironton, O. • Syracuse • Buffalo • Cincinnati • Bethlehem • Portland, Me. • Bangor, Me. • Norwood, N. Y. • Oneonta, N. Y. • Elmira, N. Y. • Cromwell, Conn. Norwich, Conn. • Savannah, Ga • In Canada: The Barrett Co. Ltd., Montreal • Toronto Winnipeg • Vancouver

Latin American Engineers Study Road Building Here

Latin American engineers touring the United States under the sponsorship of the American Road Builders' Association are photographed at a gravel crushing plant operated by the Waupaca County, Wis., Highway Department. They also were conducted through the factory of the Four Wheel Drive Auto Co.

Highway engineers of 16 Latin American countries recently completed a 3,000 mile study tour of the Middle Western states. The group, guests of The Four Wheel Drive Auto Co., Clintonville, Wis., on the completion of their trip observed the manufacture of FWD trucks and watched demonstrations of the trucks in road tests on the company's proving ground.

The engineers have completed a five weeks' Inter-American highway course in the National Academy of Science Building in Washington, D. C. The school and study tour were sponsored by the American Road Builders' Association, with the cooperation of the State Department, Office of Inter-American Affairs, Public Roads Administration, and Pan American Highway Confederation. A variety of subjects, chosen to give a balanced picture of all phases of the road building science, comprised these lectures in Washington. Experts from state highway departments, federal government agencies, municipalities, equipment and material manufacturers, and construction firms conducted the various lecture courses.

The visiting engineers attended the President's Highway Safety Conference and later took a short course at Yale University Highway Traffic Bureau.

Then on May 21 they traveled over the Pennsylvania Turnpike on the first leg of a 2,000 mile study tour which took them through Pennsylvania, Ohio, Indiana, Illinois, Iowa, and Wisconsin visiting highway departments, manufacturing plants and construction projects.

Several months' actual employment of the visitors is supplementing the tour. Those who wish to specialize in certain phases of highway work will be given the opportunity. Two of the engineers remained with The Four Wheel Drive Auto Co. to work and study.

The engineers will attend the Road Show and Highway Congress of the American Road Builders' Association, to be held for the first time since the war, in Chicago in February 1947. Here, under one roof, they will find concentrated information on just about all they have seen and heard about road building since they arrived in the country.

One of the by-products of their work will doubtless be new impetus for the completion of the great Pan American Highway connecting all capitals of the three Americas.

De Laval Labyrinth Wearing Rings contribute in a large measure to sustaining the high efficiency of De Laval pumps. The large clearance, tortuous labyrinth passage reduces leakage to a minimum and maintains ample running clearances under all conditions.

For sustained efficiency and reduced maintenance costs look for De Laval Labyrinth Wearing Rings when buying centrifugal pumps.

3235

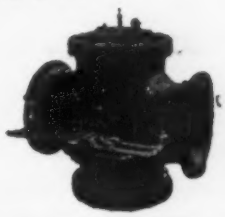
DE LAVAL STEAM TURBINE CO.
TRENTON 2, NEW JERSEY

ROSS Automatic Valves

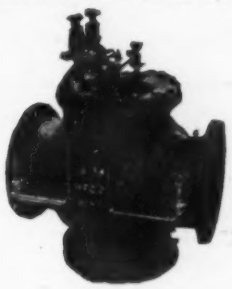
1879

Also manufacturers of float valves, pressure-reducing valves, relief valves and back pressure valves.

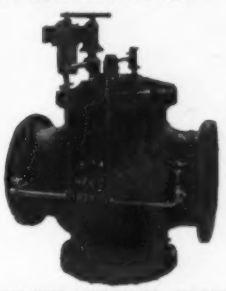
No distribution system is better than the valves that control it —



ALTITUDE VALVES
For control of elevation and heads into and out of tanks, basins and reservoirs.
1. Single acting.
2. Double acting.
3. Combination assembly for three or more automatic operations.



COMBINATION VALVE
Combination automatic control both directions through the valve.
A self-contained unit, with three or more automatic controls.

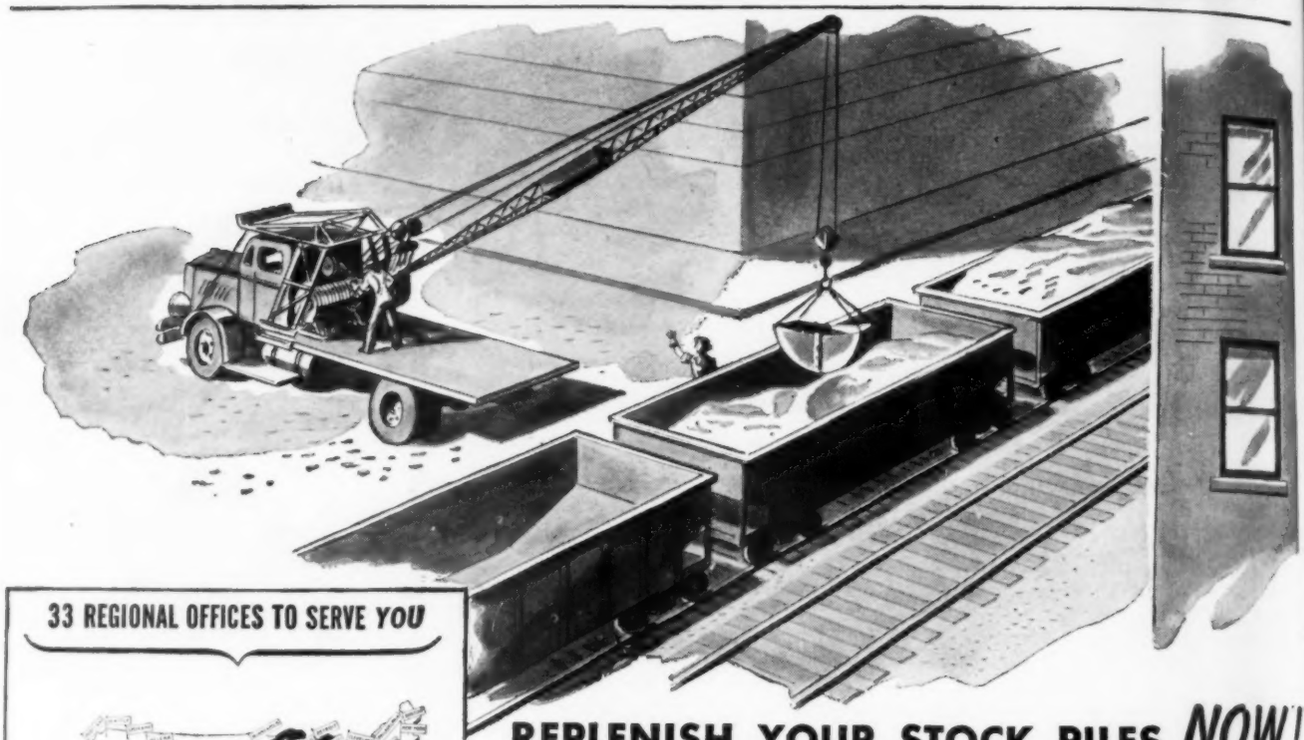


REMOTE CONTROL VALVE
Electric remote control—solenoid or motor can be furnished.
Adapted for use as primary or secondary control on any of the hydraulically controlled or operated valves.

Write today for catalogs and details to fit your particular system.

ROSS VALVE MFG. CO.
INCORPORATED
P. O. BOX 596, TROY, N. Y.

GOVERNMENT-OWNED SURPLUS PROPERTY



REPLENISH YOUR STOCK PILES *NOW!*

INDUSTRIAL CHEMICALS

AT LOW CASH COSTS

NEVER again will there be similar opportunity to obtain standard and special specification industrial chemicals at such savings.

Included in the hundreds of available items are a few chemicals now in short supply from usual sources, and items of special interest to research chemists.

All items are ready for quick sale. Credit terms may be arranged. It will pay you to first call your War Assets Administration Regional Office when replenishing chemical stocks or planning new production. Items not available in your Region will be located for you through the special Inter-Office Product Location Service. This sales method means quick action, prompt delivery.

33 REGIONAL OFFICES TO SERVE *YOU*

HUNDREDS OF ITEMS
at unusual values

- Acetone
- Acids
- Chlorinated Paraffin (approx. 40% & 70%)
- Gas cylinders (all types)
- Hexachloroethane
- Calcium carbide
- Methyl bromide
- Dyes
- Plastic materials
- Solvents
- Sealing compounds
- Petroleum catalysts
- Activated charcoal
- Silica gel
- Calcium chloride
- Strontium oxides
- Synthetic Rubber (Neoprene)
- Dimethylaniline
- Copper naphthenate
- Synthetic & natural glues
- Printing inks (black & colors)
- and most other chemicals

EXPORTERS:
Most surplus property is available to the export market. Merchandise in short supply is withheld from export and if such items appear in this advertisement, they will be so identified by an asterisk.

FREE FACTS

Mail Coupon Today

War Assets Administration (address nearest Regional Office)

Please supply without obligation, prices, available quantities and locations of items written in below:

....
....
....

.....
(Describe item wanted)

Name.....
Firm.....
Address.....
City.....Phone..... 155-4

All chemicals are subject to priority regulations. VETERANS OF WORLD WAR II are invited to be certified at the War Assets Administration Certifying Office serving their area and then to purchase the material offered herein.

WAR ASSETS ADMINISTRATION

Offices located at: Atlanta • Birmingham • Boston • Charlotte • Chicago • Cincinnati • Cleveland • Dallas • Denver • Detroit • Fort Worth • Helena • Houston Jacksonville • Kansas City, Mo. • Little Rock • Los Angeles • Louisville • Minneapolis • Nashville • New Orleans • New York • Oklahoma City • Omaha Philadelphia • Portland, Ore. • Richmond • St. Louis • Salt Lake City • San Antonio • San Francisco • Seattle • Spokane

Dresser Intensifies Water Works Coverage in East

Daniel J. Atwell has been appointed New England district manager for the sale of products of the Dresser Manufacturing Division, Dresser Industries, Inc., Bradford, Pa., to the water industry, according to an announcement by H. Z. Hight, sales manager.

D. J. Atwell

Mr. Atwell will cover New Jersey and all of the New England states from the New York office of the organization at 122 East 42nd St. and will be responsible for the sale of all Dresser couplings, fittings, and repair products in this area. His work will supplement that of Rossiter S. Scott, Dresser Manufacturing Division's water works consulting engineer. Mr. Scott's aetivities will continue to be devoted to large water supply lines in this area. The plan to give more intensive water works coverage in the East will also enable Mr. Scott to devote more time to special water works problems throughout the entire country.

Before joining Dresser some months ago, Mr. Atwell had been associated with the A. P. Smith Manufacturing Co., and the Pittsburgh Equitable Meter Co.

Agency Changes Name

The advertising agency formerly known as Rogers, Gano & Bachrodt, Inc., 75 East Wacker Drive, Chicago 1, Ill., will be known now as Bachrodt, Newell, O'Kane & Gano. This change recognizes the long association with the organization of Thomas J. O'Kane and Robert B. Newell, who are now actively interested in the management of the company. This change involves no change in operating methods, financial structure, or address.

Philadelphia Manager for Robinson Clay Products

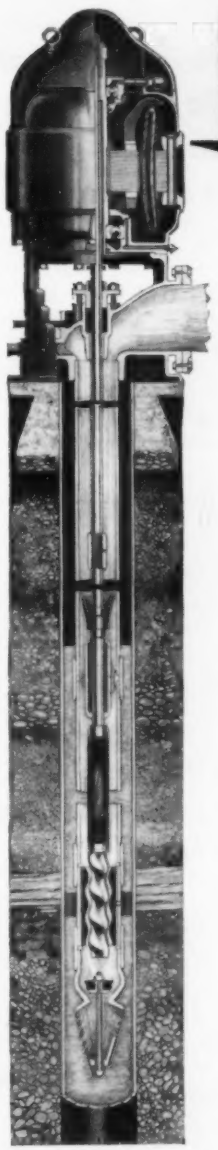
Richard C. Haury has been appointed Philadelphia resident manager for The Robinson Clay Product Co., Akron, Ohio, according to an announcement by R. A. Ferreira, sales manager. He will direct all sales activities in the Philadelphia area.

The Robinson Clay Product Co., with seven plants located throughout Ohio and Pennsylvania, is a principal manufacturer of clay pipe.

A Frank Statement:

Because of the steel situation brought about by stoppage in production, it is indicated that we cannot make deliveries on Roadmaster Street Sweeper Wire before the first of the year. We appreciate the many inquiries we have received; but in justice to all we believe we should make this announeement at this time. We hope that with the new year we shall be able to furnish you with this specially processed high scleroscope rating, uniform temper wire. Specially processed for high fatigue and against breakage. Until steel of the exact analysis can be had, Johnson will make no Street Sweeper Wire.

JOHNSON
Steel & Wire Co., Inc.
Worcester 1, Massachusetts
New York Akron Chicago Detroit
Los Angeles Toronto



HERE'S HOW
"Squeezing Water Upward"
SQUEEZES UPKEEP DOWN

PEERLESS
HI-LIFT PUMPS
(Reg. U. S. Pat. Off.)

For low-cost, limited water supply demands of multiple municipal uses.

CAPACITIES: 600 to 3300 Gals. per hour FOR WELLS AS SMALL AS 4" INSIDE DIAMETER

Peerless HI-LIFT is the pump that gives magic wings to water lift, with an ingenious pumping element.

Employing simplicity to the best possible advantage, Peerless has replaced high shaft speed, vibration, and high operating cost, found in most conventional type pumps, with a slow, smooth continuous positive pumping action that literally "squeezes" the water upward.

The only moving part in the pumping element consists of a hard, heat-treated, chrome-plated stainless steel rotor, helically contoured and revolving within a similarly shaped cutless rubber stator. Both of these units are highly resistant to abrasive action.

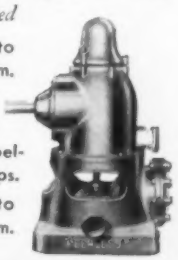
Buy the pump that "squeezes" water upward and squeezes upkeep down. Investigate today the many possibilities offered you with a Peerless Hi-Lift Pump.

SELF-PRIMING
NO OIL USED
UNDERGROUND

PATENTS: Manufactured under R. Moineau patents, U.S. 1892217, 2028-407 and Re-issue 21374. Canadian Patent 352574. By Exclusive License to Robbins and Myers, Inc. Peerless U.S. Patents 2208937, 2338937 & 2346426. Other Pats. pend.

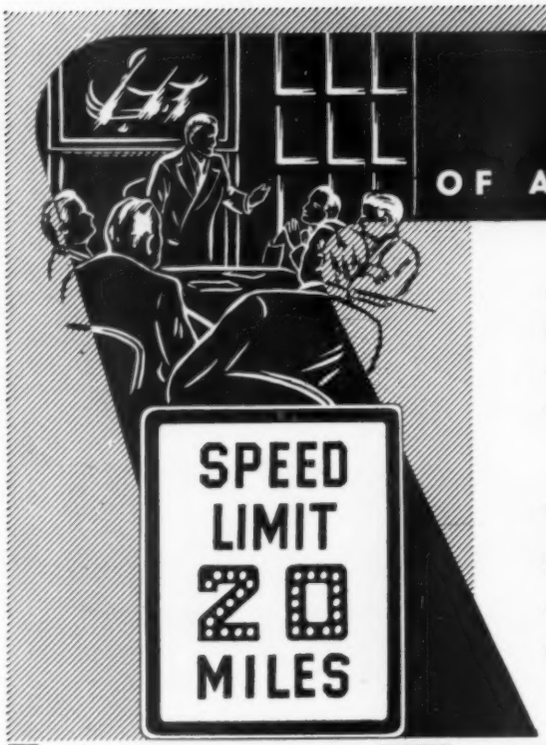
PEERLESS TURBINE PUMPS
Gearturbo (Right Angle Gear Drive)
Illustrated

Capacities up to 30,000 g.p.m.
Oil or Water lubrication.
Hydro-Foil (Propeller Type) Pumps.
Capacities up to 220,000 g.p.m.



PEERLESS PUMP

PEERLESS PUMP DIVISION
Food Machinery Corporation
Canton 6, Ohio Quincy, Illinois Los Angeles 31, Calif.



SIGNS
OF A SMART ADMINISTRATION

Accidents are fewer when traffic is properly informed. HOW FAST and WHERE TO is the first thought of every motorist approaching your city. To tell 'em plain and often is good business.

The Miro-Flex Company provides approved signs for traffic and parking control. The new catalog is an informative guide for sign purchasers. Send for your copy and tell us your problem.

M-946

MANUFACTURED BY

MIRO-FLEX COMPANY

1824 EAST SECOND STREET · WICHITA, KANSAS

Servicised ASPHALT PLANK *for* INDUSTRIAL FLOORING

EASY TO INSTALL BY NAILING OR CEMENTING!

Servicised—(ASPHALT PLANK)—*Is Tough, Resilient, and Lasts Longer—Therefore the Most Economical Industrial Flooring in Use for Traffic Laden Spaces, and Storage Areas.*

— IMPERATIVE POINTS TO REMEMBER —

EASY TO LAY—ASPHALT PLANK is easy to install, simple to fit, nail or cement to any old or new type of flooring or sub-flooring such as wood, concrete, asphalt, stone, steel, or tile. Can be laid by non-professionals.

WATERPROOF—Non-absorbant, defies infiltration and decay.

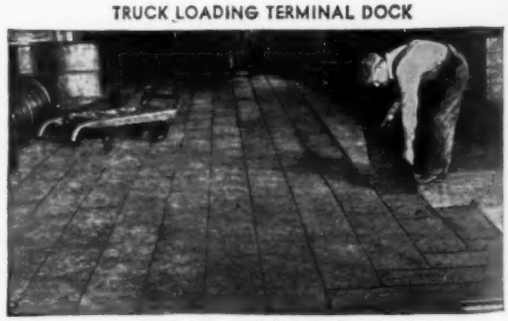
LONG LIFE—Resists friction, Acid, Dampness, decay, wear; will not chip, split, crack, crumble, freeze, warp, buckle, shrink, or creep under heavy traffic.

REDUCES NOISE and vibration, it is resilient and absorbs shock, greatly diminishing noise under heavy traffic.

Send for SAMPLES & LITERATURE

Write in today for free samples and literature. You are also invited to consult with our Engineering Department on special problems concerning industrial floor covering.

TRUCK LOADING TERMINAL DOCK



A Few Typical Installations.

Swift & Company, Chicago, Illinois
National Battery Company, Chicago, Illinois
George A. Hormel & Company, Austin, Minnesota
Ambrosia Brewing Company, Chicago, Illinois
Brush-Beryllium Company, Cleveland, Ohio

SERVICISED QUALITY PRODUCTS

SERVICISED PRODUCTS CORP.

6051 WEST 65 STREET **CHICAGO 38, ILL.**

Rattle-Proof Manhole Covers Spring-Loaded into Place

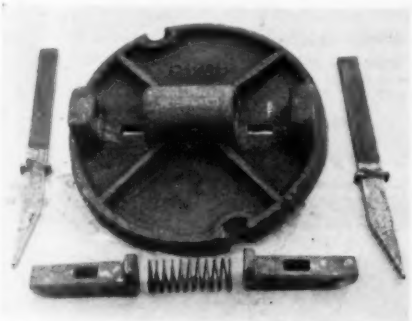
Here is the manhole cover with the two wedge bars that are used to remove it in place.

Frank Dixon got his idea for a rattle-proof manhole seven years ago when he saw a large truck drive over a manhole and lift it off the base. This cover turned on edge and rolled up on the sidewalk, narrowly missing a baby in a carriage. It continued until it crashed into the front porch of a house.

"The more I thought of the hazards of these loose manhole covers," Mr. Dixon said, "the more I made up my mind to design a lid that would be practical and still have a low manufacturing cost. The present one is the result of these studies."

Some of the features of the Dixon rattle-proof manhole cover are:

Only an authorized person with two large wedge bars can remove the lid.



The inner parts of the rattle-proof manhole cover.

A car, truck, or bus cannot displace this lid, leaving an opening for the car or truck wheels to drop into.

The lid cannot be displaced by an overloaded sewer that would back up in the manhole.

The lid is secured solidly in place and will not rattle—an advantage, especially in residential districts.

The cover is operated by 2 spring-loaded plungers that bear against the under side of the manhole rim. The plungers pass through 2 receivers that are secured to the lid proper. The lid and the plungers have slotted openings in them that, when forced into alignment by the wedge bars, make it possible for a workman to pull the plungers away from the rim of the manhole. With these wedge bars forced into position, the workman can very easily lift the manhole lid off the manhole, using the bars as handles.

The lids are now in use at Altoona, Pa., and are being tested by the city of New York. They are manufactured by Frank T. Dixon, 3409 Beale Ave., Altoona, Pa.

Fire Extinguishers Available

If you are interested in securing fire extinguishers without waiting the 60 or 90 days required when ordering new equipment, you will be interested in the products offered by The Tom Ferguson Co., 2462C Grand Ave.,, Kansas City, Mo. This distributor of fire fighting equipment can supply you with government surplus fire extinguishers. These nationally known extinguishers have not only met strict government standards, but have also been approved and labeled by the Underwriters Laboratories.

The Ferguson company furnishes nationally known extinguishers and supplies in the middle west and is distributor for the Seagrave Corporation in Missouri, Kansas, Nebraska, and Arkansas.

INSTALLATIONS WORLD WIDE

LARGEST CITY TO SMALLEST VILLAGE

VALVES COMPLETE EQUIPMENT FOR WATER WORKS FILTRATION AND SEWAGE DISPOSAL PLANTS LATEST "COREY TYPE" HYDRANTS

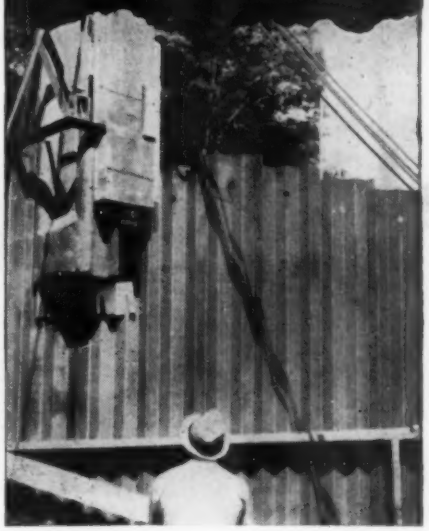
Write for Catalogue and Information

IOWA VALVE CO.

General Offices:
Hubbell Bldg., Des Moines, Iowa

Plant:
Oskaloosa, Iowa

FOR SPEED MAKE IT STEEL SHEETING



Sheeting jobs, whether permanent or temporary, are done quickly and economically with ARMCO Steel Sheeting. Check these advantages:

SAFE STRENGTH . . . ARMCO Sheeting is corrugated to assure ample strength with light weight. This makes for easy handling and quick installation.

EASY TO DRIVE . . . Light weight and small displacement area simplify driving. Sections butt together or are held securely in place by interlocking joints that assure the right alignment and practical water-tightness.

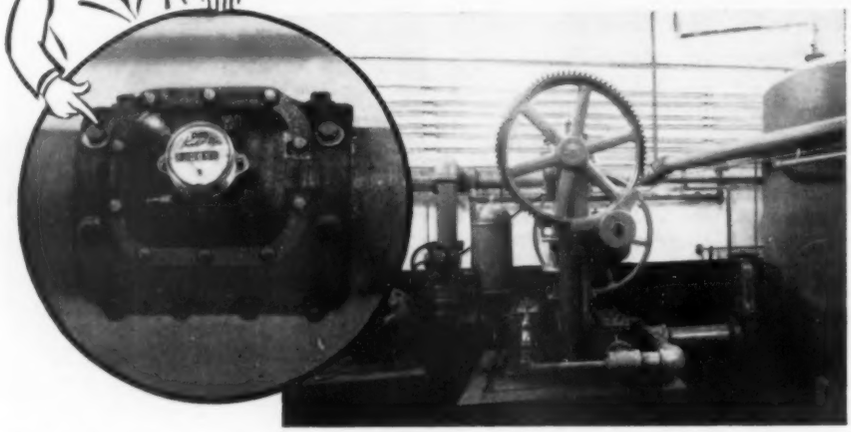
LOW COST . . . Besides economy of installation ARMCO Sheeting is low in cost. You buy the exact weight you need. Repeated use of the sheeting makes job costs surprisingly low.

ARMCO Sheeting is nestable and requires comparatively little space for shipment and storage. Write for prices and information on how ARMCO Steel Sheeting can better do your job. Armco Drainage & Metal Products, Inc., and Associated Companies, 2435 Curtis Street, Middletown, Ohio.

ARMCO

ARMCO STEEL SHEETING

WELL! WELL!
WATER FROM 58 WELLS METERED BY ONE - PROPELOFLO METER



Eight-inch Propeloflo Meter. Available in Flange or Bell and Spigot models, sizes 2" to 36".

● Metering the water from more than half a hundred wells is all in the day's work for Builders Propeloflo Meter. At the Wakefield, Mass., pumping station shown, the water from 58 wells is collected in a large tank under vacuum and pumped into the mains, with all flow accurately totalized by the 8" Propeloflo Meter. To facilitate reading, the meter is mounted on the side of the line, but regardless of position — whether horizontal, vertical or inclined — the meter is always accurate. Should the line drain or the flow be temporarily interrupted, correct registration will be automatically resumed when normal flow is restored.

The Builders Propeloflo Meter is ideal for metering well water supplies; its streamline Venturi design gives exceptional accuracy over a wide range of flow and its low head loss means reduced pumping costs.

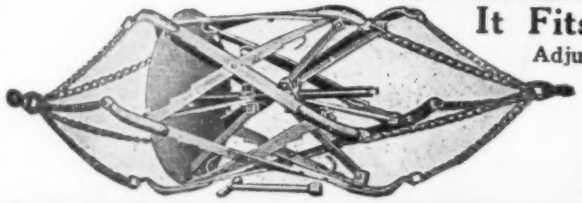
Just one of the many Builders products for metering and controlling flow.

For Bulletin 350A, address Builders-Providence, Inc., (Division of Builders Iron Foundry), 18 Codding Street, Providence 1, R. I.

BUILDERS PROVIDENCE
Instruments

EXPANDING ROOT CUTTER & SEWER CLEANER

Open and in action removing roots and caked sediment like this.



It Fits in on Every Sewer Cleaning Job

Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

Write for our new catalog on complete sewer cleaning equipment.

EXPANDING SEWER MACHINE COMPANY

108 East Walnut St. Nappanee, Ind.

RUST & CORROSION
BITUMINOUS ENAMEL

We are nationally-known approved applicators of Bituminous Coatings for treating Steel Stand-pipes, Elevated Water Tanks, Water Mains, Pen-stocks, Lockgates and other Water Works installations.

Send for free explanatory booklet.

W. A. BRIGGS BITUMEN Co.

3303 Richmond St., Philadelphia 34, Pa.

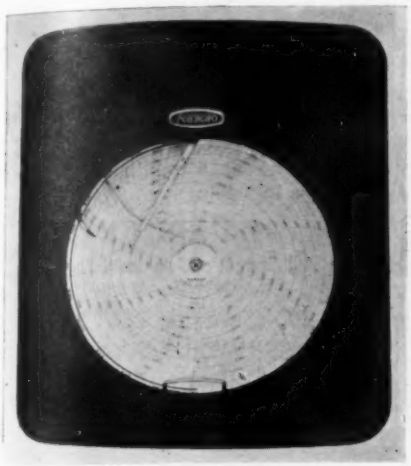
FOR STOPPING LEAKS IN PIPE LINES...

Emergency Pipe Clamp—the universal repair clamp the world over, for nearly half a century! Easy to apply. Saves cost of new pipe—eliminates job of tearing out old and putting in new.

M. B. SKINNER CO.
SOUTH BEND 21, INDIANA

SKINNER-SEAL EMERGENCY PIPE CLAMPS

Improved Controller for Temperature Pressure



The new Foxboro controller retains its operating-panel feature in Model 40.

The new Model 40 controller, which replaces Model 30, is the instrument recommended by The Foxboro Co., Foxboro, Mass., for control of temperature, pressure, flow, and other variables in continuous processes, or other processes in which control requirements are exacting. It represents no departure in basic operating principles from that of Model 30, but offers improvements in design and construction.

Simplification of design is said to result in superior performance, more flexible adjustments, and easier replacement or interchange of unit parts.

The operating-panel feature of "Stabilog" control instruments is retained, so that when the case door is open for service adjustments every part is immediately accessible.

Adaptability in changing from one type of control to another is an outstanding characteristic of Model 40. Setting of the proportional band and reversal of instrument action are made by the turn of a thumb wheel. A new type of transfer switch enables the operator to change from manual to automatic control easily and rapidly.

Improvements in design have been carried out in all the associated equipment, as well as in the primary "Stabilog" control mechanism, including the pneumatic transmission.

Graver Appoints Manager of Sales

Willard M. Broxham has been appointed manager of sales for the fabricated plate division of the Graver Tank & Mfg. Co., Inc., East Chicago, Ind. Mr. Broxham formerly managed Graver's Philadelphia office and is now making his headquarters at the general offices in East Chicago.

Worthington Gas Engines in Quincy, Mass., Sewage Plant

A contract for the gas engines to be installed in the Nut Island Sewage Treatment Plant, Quincy, Mass., has been awarded to the Worthington Pump and Machinery Corporation. The contract calls for four Worthington Dual-Fuel engines, recently developed by Worthington, that will operate interchangeably, without shutdown, on either Diesel oil or fuel gas, or in any proportion of the two. In the Quincy plant, sludge gas reclaimed from sewage treatment will be utilized.

The Worthington Dual-Fuel engines, coupled with a straight gas engine-driven generator unit, will furnish power which will be used to drive motor-driven sewage pumps consisting of four vertical 48-in. pumps with 54-in. suctions.

Locate Underground Leaks

without any digging . . .

with a

GEOPHONE

(Reg. U. S. Pat. Off.)

The original leak locator of the Geophone type

Placed in contact with earth, the GEOPHONE accurately detects, by sound, the position of leaks in underground water or steam pipes.

Leaks are too costly to be ignored. A pin-point size leak wastes 65,000 gallons of water annually!

A GEOPHONE saves the cost of locating leaks—saves the costs of surveys, excavating, replacing. A big paying investment for water, sewerage and Public Works Departments; for any plant with underground water or steam pipes.

Outfit complete with two GEOPHONES, connecting tubes, earphones, in heavy leather carrying case with shoulder straps. ...$75

Write at once to

Globe Phone Mfg. Corp.

Dept. H. Reading, Mass.

Manufacturers of the Geophone Since 1918

THERE'S NO *guesswork*

. . . in the Diamond Line

The products in McDonald's well-known Diamond Line are the result of the highest degree of skilled craftsmanship and precision engineering. And for 90 years the trade has tested, proved, and enthusiastically accepted these high quality items. Illustrated is Plate E-3061, McDonald Diamond Patent Cap Inverted Key Curb Stop, round way, malleable galvanized tee handle, iron pipe. Sizes ½, ⅝, ¾, 1, 1¼, 1½, and 2 inches. Also available in a Stop and Drain pattern. Write for information.

EST. 1858 McDonald

A. Y. McDONALD MFG. CO.

DUBUQUE, IOWA

BRASS GOODS • PUMPS • OIL EQUIPMENT

NEW "OPENING DOOR" Roll of Honor

Bronze door partly open. Shows bronze sheets which form the pages of this permanent all bronze book of remembrance.

New and distinctive—Cincinnati Metalcrafts "Opening Door" Roll of Honor is the most practical and economical answer to the memorial problem. It is all bronze, therefore everlasting. Easily installed in inside or outside walls. Hinged bronze sheets, richly photo-engraved, swing out like the leaves of a book and accommodate from a few to several hundred names. New sheets can be added as needed. The "Opening Door" Roll of Honor is an exclusive Cincinnati Metalcrafts design. Patent applied for.

With the heavy bronze door closed every detail is symbolic of the perfect tribute.

MEMORIALS FOR ALL PURPOSES

For more than one hundred years Cincinnati Metalcrafts has been nationally recognized as an outstanding leader in metal fabrication and craftsmanship. This skill and experience is yours to command. We will help you plan and design just the memorial that will mean complete satisfaction to all concerned. Our work encompasses memorials in tribute to thousands, as well as tablets and plaques in memory of one or a few.

Write for bulletin giving complete details of the "Opening Door" Roll of Honor, together with 24 page catalogue showing Cincinnati Metalcrafts memorial designs for every purpose.

METAL CRAFT

Every Cincinnati Metalcrafts tablet, plaque and honor roll is guaranteed to be of highest quality materials and workmanship.

CINCINNATI METALCRAFTS, INC.

Dept. AC, 34th & Robertson Cincinnati 9, Ohio

BUY FOR SERVICE

Department costs may rise steadily but maintenance costs of Murdock Drinking Fountains, Hydrants and Street Washers will continue at a minimum. Continue to write

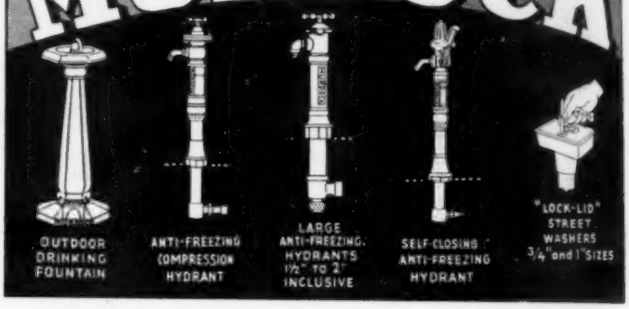
MURDOCK

in All Specifications and Requests for Bids on

OUTDOOR WATER SERVICE DEVICES

The Murdock Mfg. & Sup. Co.
426 Plum St. Cincinnati 2, Ohio

MURDOCK


OUTDOOR DRINKING FOUNTAIN
ANTI-FREEZING COMPRESSION HYDRANT
LARGE ANTI-FREEZING HYDRANTS 1½" TO 2" INCLUSIVE
SELF-CLOSING ANTI-FREEZING HYDRANT
"LOCK-LID" STREET WASHERS 3/4" and 1" SIZES

WANTED: TRAINED CITY ADMINISTRATORS

☆ Cities all over the country are losing some of their top administrators to the federal and state Governments and to industries. Unless there are trained replacements for these key men, city governments will be seriously crippled. If you are a department head, you owe it to your city to train an "understudy" for your job. If you are a junior administrator, now is the time to prepare for advancement.

Enroll now in one of these eight practical correspondence courses:

- Technique of Municipal Administration
- Municipal Finance Administration
- Municipal Police Administration
- Municipal Recreation Administration
- Municipal Personnel Administration
- Municipal Public Works Administration
- Municipal Fire Administration
- Local Planning Administration

☆ Special texts have been prepared for administrators on the job. Lesson papers are reviewed by leading authorities in each field. The $35 fee for each course covers the text, individualized lesson instruction, and a certificate upon satisfactory completion of the work. The text alone sells for $7.50 a copy—$55 for a complete set. For use in group training projects, in lots of five or more, the price is $6 a copy.

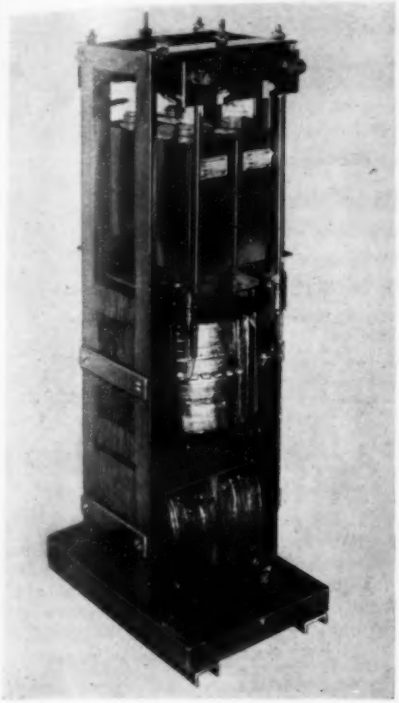
There are now nearly 1500 public officials enrolled in these courses in nearly 300 cities in 46 states.

WRITE FOR A SPECIAL CIRCULAR TODAY

THE INTERNATIONAL CITY MANAGERS' ASSOCIATION

1313 EAST 60TH STREET CHICAGO 37

New Constant Current Controller



The Haug system constant current regulator with the housing removed. The top compartment contains two 5-mfd capacitors; in the middle is the current transformer; at the bottom, double reactor on one core.

Pictured here is a new constant current regulator for holding current constant in series lighting for streets, highways, airports, runways, and floodlighting. Stated advantages include unity power factor, no moving parts, no oil, and ability to flash or dim the lights or turn off any lights without affecting the remaining lights. It can be built to operate from 3-phase supply and operates mercury and sodium vapor on the same circuit with incandescent lamps.

Regulators of any capacity can be furnished and the 10-kw circuit is recommended with further requirements supplied in any multiples of 10 kw to serve points between. The 10-kw unit is 40 in. high, 20 in. wide, 14 in. deep and weighs 580 lbs. Full information can be had from Modern Controls, Inc., 170 West Adams St., Chicago 3, Ill.

Hood Chemical Co., Inc. Moves Office

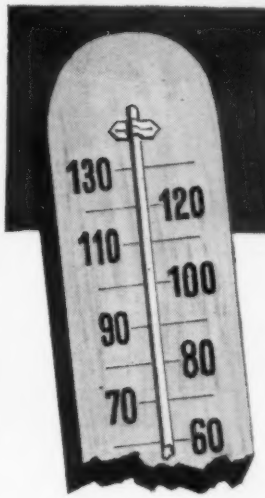
Hood Chemical Co., Inc., has moved its executive and general offices from New York City to Pittsburgh, according to a recent announcement by Kenneth P. Dietrich, president. A complete suite of offices in the Hardy & Hayes Bldg., Oliver Avenue and Wood Street, has been taken over by the company and is now in the process of renovation.

Mr. Dietrich also announced the following appointments to handle the distribution and sales of the company's new cleaning product, Sing: The Walter P. Boos Co., 425 Rockefeller Bldg., Cleveland, Ohio; E. J. Griffiths and Son, 43 West Long St.. Columbus, Ohio; The Duling Brothers Co., Thirteenth and Second Ave., Huntington. W. Va.; Consolidated Brokerage Co., Federal St., Bluefield, W. Va.; and Jarrett Brokerage Co., Roanoke Public Warehouse Bldg.. Roanoke, Va.

Woolpert Co. Moves Office

The Ralph W. Woolpert Co., consulting engineers, Dayton, Ohio, has recently moved to new quarters at 360 West First St.

This company has recently completed an industrial waste survey at Crystal Lake, Ill., which involved a study of wastes discharged from the National Grain and Yeast Corp. into the city's storm sewers, and has been retained to supervise the operation of the waste treatment plant. Its engineers are also completing the design of three municipal sewage treatment plants that will serve Middleport, Centerville, and West Carrollton, Ohio. The plants are designed to meet the requirements of the Ohio River Compact on stream sanitation. This work is being done under the direction of Myron W. Tatlock of the Woolpert Co. who is vice-president of the Central Section of the American Public Works Association.

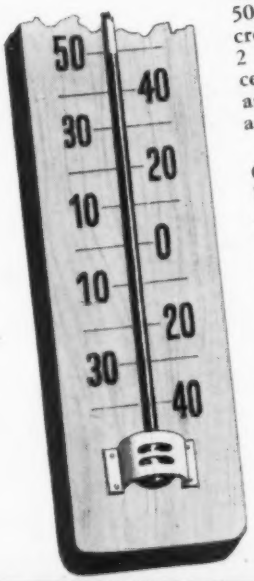


SPEED WORK

CULVERTS • CURBS
BRIDGES • ODD JOBS

Use Calcium Chloride
In All Concreting

BELOW 50 DEGREES



When the temperature drops from 70 degrees to 50 degrees, it takes twice as long for normal concrete to acquire specified strength. But by using 2 pounds of calcium chloride for each bag of cement, this lag in gaining strength is overcome, and normal strength is attained in the same time as during the summer months.

Use calcium chloride in all Portland Cement Concrete when a temperature drop to 50° or below is indicated within 24 hours, and get back on normal 70° summertime operating schedules for placing, finishing, removal of forms, and opening for use. At freezing temperatures when covers and artificial heat are necessary, calcium chloride reduces the time this protection is required.

Concrete with calcium chloride has greater strength at all ages tested.

Get your copy of the new book, "Calcium Chloride in Concreting," explaining methods, amounts to use and results of tests by the National Bureau of Standards.

CALCIUM CHLORIDE ASSOCIATION
4145 Penobscot Bldg. • Detroit 26, Mich.

Better Concrete Faster
with CALCIUM CHLORIDE

TANKS

Cole elevated tanks are helping to provide uniform water pressure, fire protection and adequate water reserve in Charlotte, Mobile, Daytona Beach, Spartanburg, St. Petersburg, Gastonia and scores of other American cities.

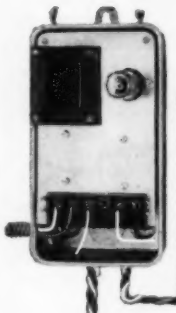
We design, fabricate and erect elevated tanks of 5,000 to 2,000,000 gal. capacity, with hemispherical, ellipsoidal or conical bottoms. Correct in design—economical to maintain.

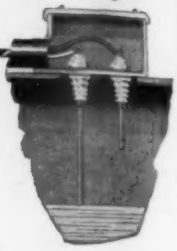
State capacity, height to bottom and location.

R.D. COLE MFG. CO. Newnan Ga. ESTABLISHED 1854

these ELECTRONIC stainless steel FINGERS

STOP WASTE AND LOSS





By Preventing

- Overflow of tanks
- Draining of boilers
- Air binding of pumps
- Burning out boiler tubes.
- Water contamination

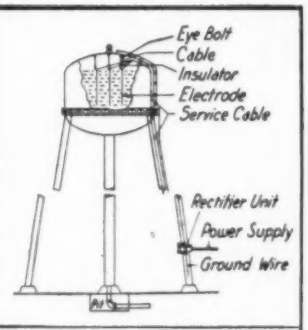
Faratron Electronic Liquid Level Controls

TO PUMP MOTORS— High or Low SIGNAL BELLS or LIGHTS— Motorized VALVES— Etc.

Just two polished stainless steel rods — that's all in any vat, tank, boiler, reservoir etc., to control signals or operate pumps or valves, automatically; they are constantly on duty — need no servicing — and are easy to install.

If you have any liquids—hot or cold—in any type of container—to control, you should have our Bulletin 610. Write for it today.

Lumenite Electronic Company
ENGINEERS · DESIGNERS · MANUFACTURERS
407 S. Dearborn Street Chicago 5, Ill.



STOP

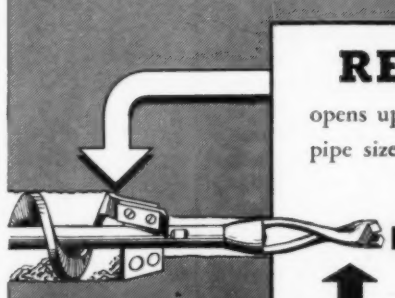
UNDERWATER RUSTING Immediately!

The "job-proved" Electro Rust-Proofing System of Cathodic Protection *instantly* and *permanently* stops rust formation on the water-contact areas of steel tanks and other water storage or water handling equipment. An electrolytic process does the work. No chemicals or moving parts. Tremendously reduced maintenance cost. Engineered to your problem and fully guaranteed. Initial cost is low; operation costs are negligible. Write for your copy of our fact-filled folder.

ELECTRO RUST-PROOFING Corporation
DAYTON 10, OHIO, U. S. A.

UNDERGROUND pipe installation

Simple as 1·2·3



REAMER
opens up hole to just over pipe size.

up to 150 or 200 feet!

PILOT BIT
opens up the hole and maintains straight boring.

90-pounds of air pressure and sufficient water to flush back cuttings is all that's needed to operate the HYDRAUGER.

HYDRAUGER

HYDRAUGER CORPORATION, LTD.
116 NEW MONTGOMERY STREET
SAN FRANCISCO, CALIFORNIA

How Mark-Time Introduced the "1947" Model During 1946

Municipal officials were enabled to secure a post-war "1947 Mark-Time model" parking meter this year through an ingenious program of reconversion from war to peace goods production which was initiated by M. H. Rhodes, Inc., Hartford 6, Conn., manufacturers of the Mark-Time Perfection meter.

This feature, says the company, was the application of a rotating "lend lease." Mark-Time manufactured a limited number of admittedly pre-war models. But they were not for sale. A municipality received these pre-war meters as a loan, and pocketed their revenue, while the post-war model was being developed. This gave time to conduct a series of thorough tests, and to perfect manufacturing methods. A parking meter, like any new piece of machinery, requires studies of actual operations to work out the refinements of manufacturing processes essential to a perfected product. In this case the testing ran through three stages.

First a number of test meters of the new design were placed in a test room in the factory, where they were kept in constant operation week after week. The designing engineers subjected them to all kinds of abuse, and whenever an idea for an improvement suggested itself, it was recommended to the manufacturing department.

The second stage of testing called for actual operation by the public on city streets. The test meters were installed during the most severe period of the winter. Constant checks were made while the manufacturing department prepared for production.

The final stage was a precautionary checking operation. The manufacturing department commenced producing for delivery. Even though two series of tests had been made upon initial production, conservative manufacturing practice dictated observation of the initial installations. This extra precaution enabled the factory to make two or three minor refinements after production had commenced. This observation of installations is still continuing, and it is paying for itself—for a recent installation showed that only two out of 300 meters needed any adjustment after 60 days of use on the streets.

Naturally, all this checking and testing slowed delivery during the first months of 1946. But it permitted perfecting a really post-war meter while purchasers were using the early models received as loans. Consequently, the second half of 1946 is seeing installations proceeding at the greatest rate in history.

South Bend GUTTER-SNIPE

Pick-up Street Sweeper

MUNICIPAL SUPPLY COMPANY

Manufacturers

Street Sweepers
Street Flushers
Bituminous Distributors

SOUTH BEND 23, INDIANA

EXPORT DEPARTMENT, 44 Whitehall Street, NEW YORK 4, N. Y., U. S. A.

★ ★

Fresh, high quality broom fibres last longer

AFRICAN BASS FIBRES

INDIA PALMYRAH STALKS

The longer mileage you obtain from fresh broom fibres means less time-taking refilling of the broom core and valuable man-hours put to an extra use. The use of fresh, high-quality fibres in your mechanical sweeper is sound economy these days.

We are able to service every need in all types and sizes. We would be happy to receive your request for samples and quotations.

MOUNTAIN HICKORY SPLINTS

STEEL WIRE SWEEPER STALKS

The OTTO GERDAU CO.

Established 1872

82 Wall Street, New York 5, N. Y.

Just One Man and a Wrench

Wouldn't that look good on *your* pipe-laying job? No expensive labor standing around to lend a hand now and then, and get in one another's way. No expensive labor *at all*, because unskilled labor can do a professional job with this McWane pipe. Ever-lasting McWane 2″ cast iron pipe costs little more than short-lived substitutes. Get the 2″ pipe that lays the easiest, lasts the longest.

McWane Cast Iron Pipe Co.
Birmingham 2, Ala.

McWANE 2" CAST IRON PIPE

High Quality VALVES HYDRANTS

AND WATERWORKS ACCESSORIES

M & H products, including pipe line accessories, are well known for high quality of material and expert workmanship. They are made according to standard specifications and have been used for many years throughout the country. Write for Catalog No. 34.

M & H VALVE
AND FITTINGS COMPANY
ANNISTON, ALABAMA

The Stewart Iron Works Company
CINCINNATI, OHIO

TO OFFICIALS INTERESTED IN JAIL AND PRISON CONSTRUCTION

Stewart has been building jail and prison equipment since 1886.

Our engineers will gladly give architects, builders and penal authorities the benefit of many years' experience in the jail building field. Layouts, estimates and complete information on grating and plate cells, doors, lock and locking devices, bunks, tables, seats and every accessory for new construction or the remodeling of old buildings. Stewart Non-Climbable Chain Link Wire Fence is ideal for jail yards and exercise areas.

Write today! There's no cost or obligation for plans, specifications and estimates. Address The Stewart Iron Works Co., Inc., 1321 Stewart Block, Cincinnati 1, Ohio.

Stewart
Jail and Prison Specialists Since 1886

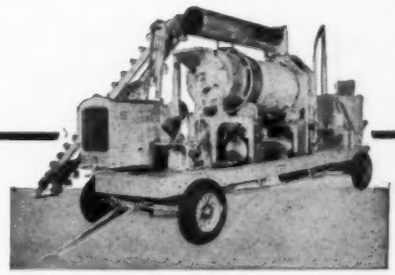
GUNITE

NEW CONSTRUCTION—REPAIRS

- PRESTRESSED TANKS
- STEEL ENCASEMENTS
- RESERVOIR LINING
- DAM REPAIRS
- PEN STOCK LINING
- TUNNEL LINING
- SMOKE STACK LINING
- SEWER REPAIRS
- DISINTEGRATED CONCRETE ABUTMENTS RENEWED
- REPAIRS TO ALL TYPES OF MASONRY

Write for our Bulletins

PRESSURE CONCRETE CO.
Engineers & Gunite Contractors
1st Nat. Bank Bldg. FLORENCE, ALA.
6 Avenue B NEWARK 5, N. J.



PORTABLE ASPHALT PLANTS

Write for Catalog

Elkhart **White Mfg. Co.** Indiana

Walker Joins Staff of Clay Sewer Pipe Assn.

Edward A. Walker has joined the technical staff of the Clay Sewer Pipe Association, Inc., 1105 Huntington Bank Bldg., Columbus 15, Ohio. This is another step in the expansion of the association's field promotion program.

Mr. Walker is to be District Engineer representing the Clay Sewer Pipe Association in the state of Pennsylvania. His offices will be at 503 Chestnut St., Greensburg, Pa. He was previously connected with the Pennsylvania Department of Health since 1937; prior to that time he was with the Pennsylvania Railroad Company and the John F. Casey Co., Pittsburgh, Pa.

Blueprint for Streamlined Snow Removal

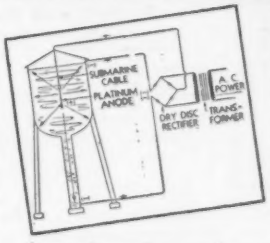
A survey of county, municipal, and state highway and street commissioners in storm-battered northern states shows that under the stress of last year's emergency several of the men hit upon new methods of removing snow and ice and improved their usual techniques to speed up operations. Commissioners were asked whether the experience provided any clues for more efficient operation in the future, and most of them agreed it did.

At least 85% of their answers expressed the conviction that "machines alone could not solve the difficulties and special problems that each winter brings." They agreed, too, that the best way to lick a tough storm was to control it at the start with rock salt.

Officials who reported the least difficulty with accumulated snow said they kept their available machines loaded with rock salt, ready and waiting for a call from the Weather Bureau to get started. By spreading this melting agent before more than ½-in. of snow had fallen, they were able to remove the fall more quickly and easily than they could have if they had waited until the snow had packed and frozen to the road surface. Some commissioners said they plotted their entire snow removal operation in advance and maintained an hourly check with the local weather bureau so that when storm warnings were received phone calls to garages and supervisors would start the organization rolling.

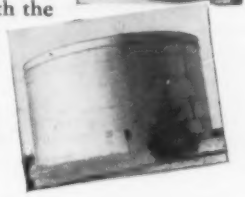
Most commissioners felt that their difficulties in effecting speedier snow and ice removal would be considerably lightened once equipment restrictions were lifted. New equipment, plus use of rock salt at beginning of storm, will greatly simplify snow removal operation.

RUSTA RESTOR *Prevents Rusting*



Modern, Service-Proved Cathodic Method Gives Lasting Protection Against Rusting—Minimizes Tank Maintenance—Costs Only Two Mills ($0.002) Per Year Per Square Foot of Surface Protected.

Approved and endorsed by national and state authorities, Rusta Restor, the modern cathodic method, maintains the tank in a "neutralized" state that not only prevents rusting but also removes the products of any earlier rusting. It eliminates both the loss of service, and cost, of interior painting. Rusta Restor equipment is inexpensive to install, and cheap to operate. Used from coast-to-coast. Send for full details today.



RUSTA RESTOR
A DIVISION OF
THE JOHNSTON AND JENNINGS COMPANY
861 ADDISON ROAD • • • CLEVELAND 14, OHIO

THE AMERICAN CITY
Professional Service Directory

ABRAMS AERIAL SURVEY CORPORATION, Lansing, Michigan
One-quarter Century of Experience
Planimetric and topographic maps, controlled mosaics,
Stereograms, relief models, large-scale atlas sheets.
The complete job—photography—compilation—to finished survey.
Oblique photographs for pictorial views—for project presentation.
AERIAL SURVEYS — OBLIQUE PHOTOGRAPHY

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